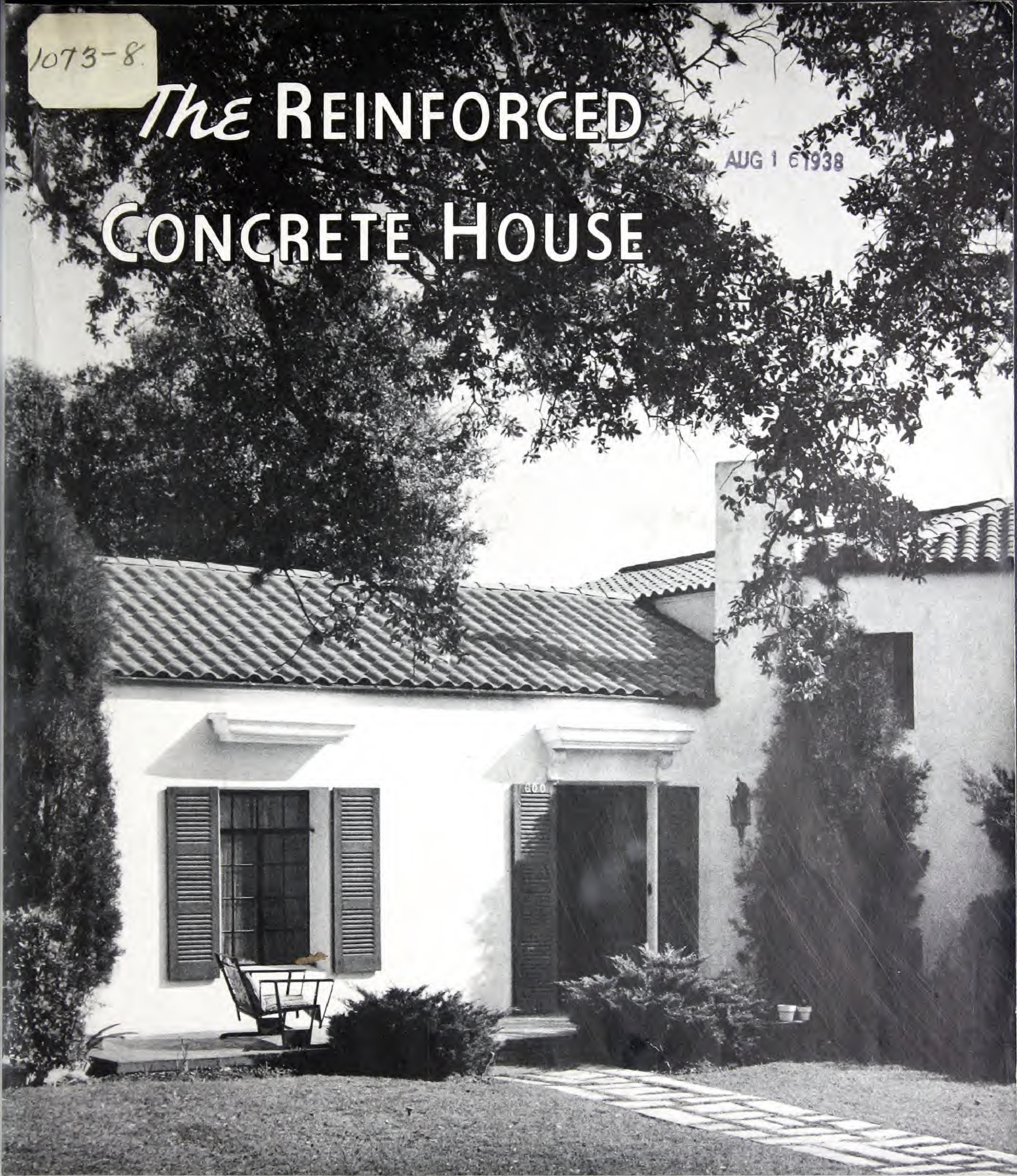


1073-8

# *The* REINFORCED CONCRETE HOUSE

AUG 1 6 1938





## The Reinforced Concrete House

THE one type of home construction that has enjoyed the greatest increase in popularity in modern times is the concrete house. Since America resumed home building, each succeeding year has shown an increase in the percentage of homes built of concrete. At present more people are building concrete homes than in any previous year.

This swing to concrete, some people insist, is because home buyers today have a keener sense of values. It means that people want beautiful, well-designed homes, erected of durable materials, protected against the hazard of fire and the elements and practically free from maintenance costs. Owners of concrete homes will tell you frankly that these are the principal reasons why they think it's smart to live in a concrete house—and they are the owners of modest, four-room cottages as well as the masters of large, many-roomed mansions.

To keep pace with rapid advances in house construction and to inform prospective home builders of the many desirable advantages that are available in concrete construction—we present here the Reinforced Concrete House—the ultimate in permanent beauty, comfort, livability and economy.

The reinforced concrete house is not new. This principle of construction (forming concrete directly into walls and floors) was first used many years ago—and although those old houses may be outmoded, they are still sturdy, comfortable places that their owners are proud to call "home." Rapid advances made in the technique of designing and casting concrete into walls and floors has greatly lowered the cost of building a reinforced concrete house. In fact, this type now can be built for very little more than ordinary houses which have few of the advantages of concrete.

Another improvement in the use of reinforced concrete is the development of scores of characteristic wall textures which give the home owner an almost unlimited choice of appropriate finishes for any style of architecture desired.

Proof that reinforced concrete is not only a splendid idea but a widely accepted way to build fine homes is the fact that competent builders and contractors have trained and equipped themselves to handle the growing demand for this type of construction.

On the following pages are shown a number of examples of reinforced concrete homes—both old and new—with notes on advantages other people have found in concrete home ownership. Running throughout is the story of the reinforced concrete house—how it is built, the accepted types of walls, floors and insulation, and some of the interesting possibilities for individual treatment. We hope that all readers will find something of value here—those who like to study home styles and plans, and those who wish to go further and learn more about fine home construction.

**Portland Cement Association**





Austin, Texas

J. C. Gilstrap, Designer and Builder

Everyone at some time dreams of owning a home so charming that it would be a joy to live in it—a home that would warm the hearts of all who see it. Such homey beauty can be achieved easily with reinforced concrete construction, which readily lends itself to any architectural form the owner may desire. This cozy home at Austin, Texas, is the delight of its owners and will continue to be for a long time because its beauty is more than skin deep. It is substantially built of concrete.

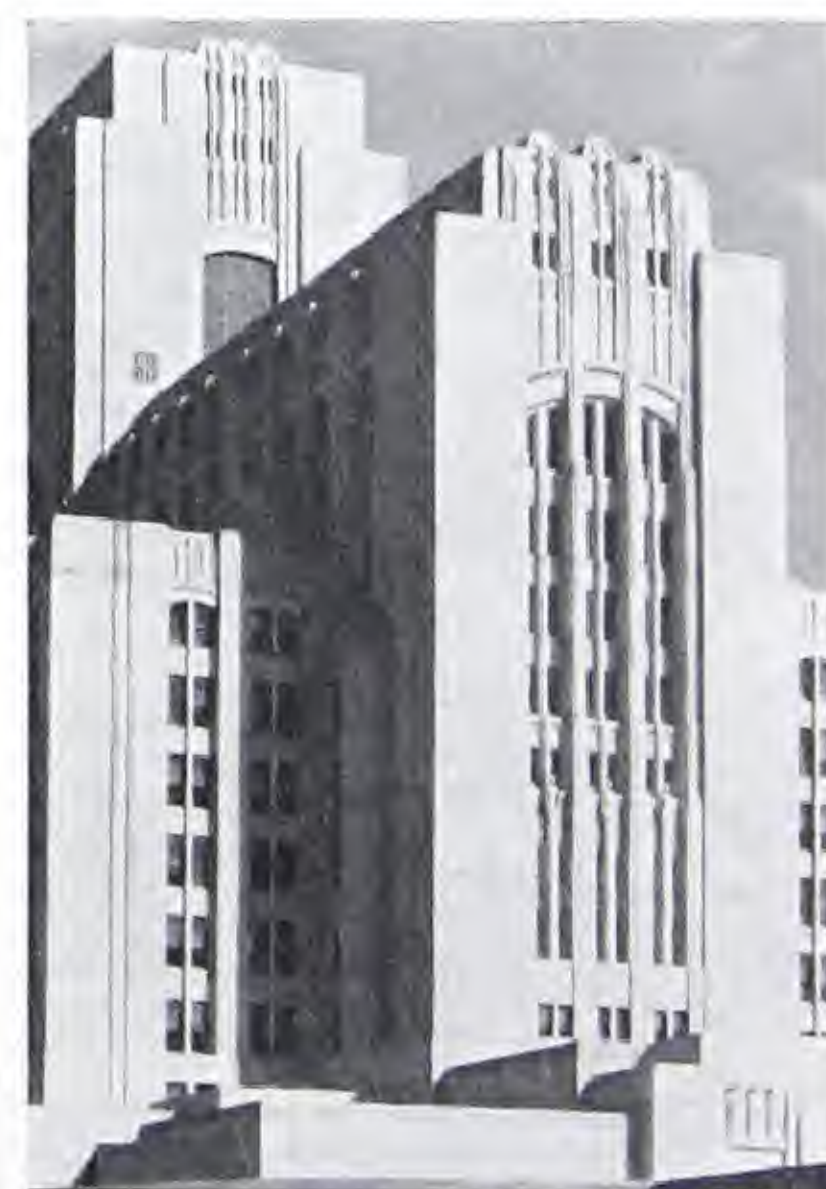
### What Is Reinforced Concrete?

Long ago it was discovered that concrete when combined with embedded steel rods or mesh makes an economical structural plastic of great strength and endurance. This discovery combining the great crushing strength of concrete with the high tensile strength of steel gave the building industry reinforced concrete.

Strength, permanence and economy made reinforced concrete an accepted standard for large building construction. It produces rigid structures which resist damage from vibration, are resistant to wear, and are firesafe. Many of the large buildings one sees have reinforced concrete frames, and now that more has been

learned about handling concrete architecturally, there are increasing numbers of all-concrete buildings—with walls and floors cast together forming an integral unit. Reinforced Concrete—the structural material—has become an architectural medium.

Applying reinforced concrete construction to home building is simply an application of the same principles on a smaller scale. Instead of large forms, smaller ones are used. Instead of massive detail, smaller, more delicate and appropriate decoration is employed. The reinforced concrete house is skyscraper construction within the means of the thrifty home owner.



An all-reinforced concrete building.

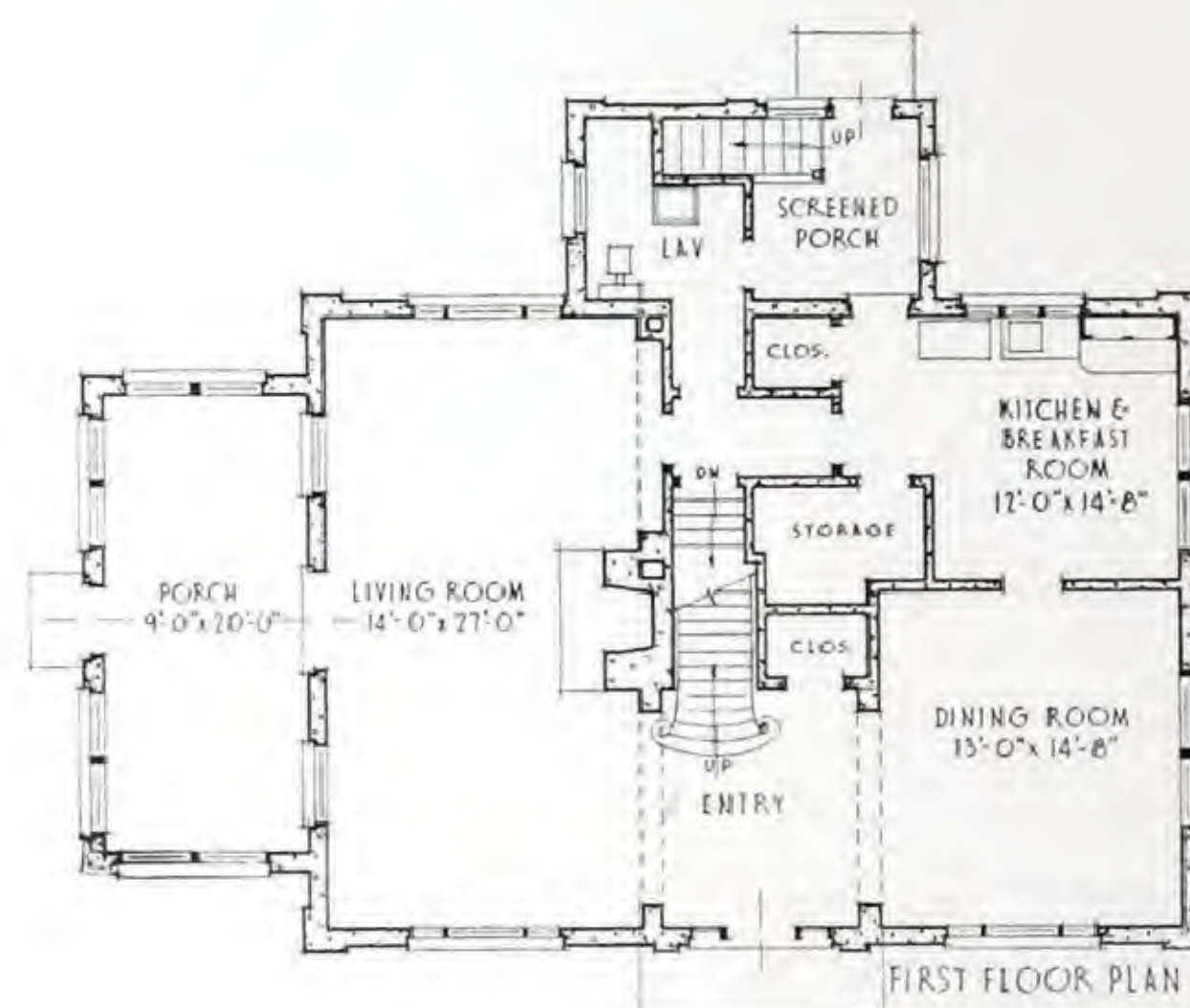




Winter Haven, Florida

Homer G. Gibbs, Architect  
Ted B. Johns Co., Builder

A home hardly can be a joy if its upkeep is constantly making raids on the pocketbook. But the need for expensive maintenance can be avoided if the home is built of concrete. For example, the walls of this lovely home at Winter Haven never will demand much attention, since concrete is a permanent material that actually gets stronger with age.



Tamping concrete in forms.

### Reinforced Concrete House Walls

There are many methods for producing walls of reinforced concrete, but all have something in common—the walls are cast in wood or metal forms (or molds) in which steel reinforcing bars or mesh have been previously arranged.

Three kinds of reinforced concrete walls may be taken as typical of all others. One is the solid wall, of proper thickness, which may be given an application of cement paint or other treatment.

Another type is the double wall, which

provides a hollow space as wall insulation. If the interior wall is molded against smooth or patterned form liners, it will require no plastering or other treatment aside from painting.

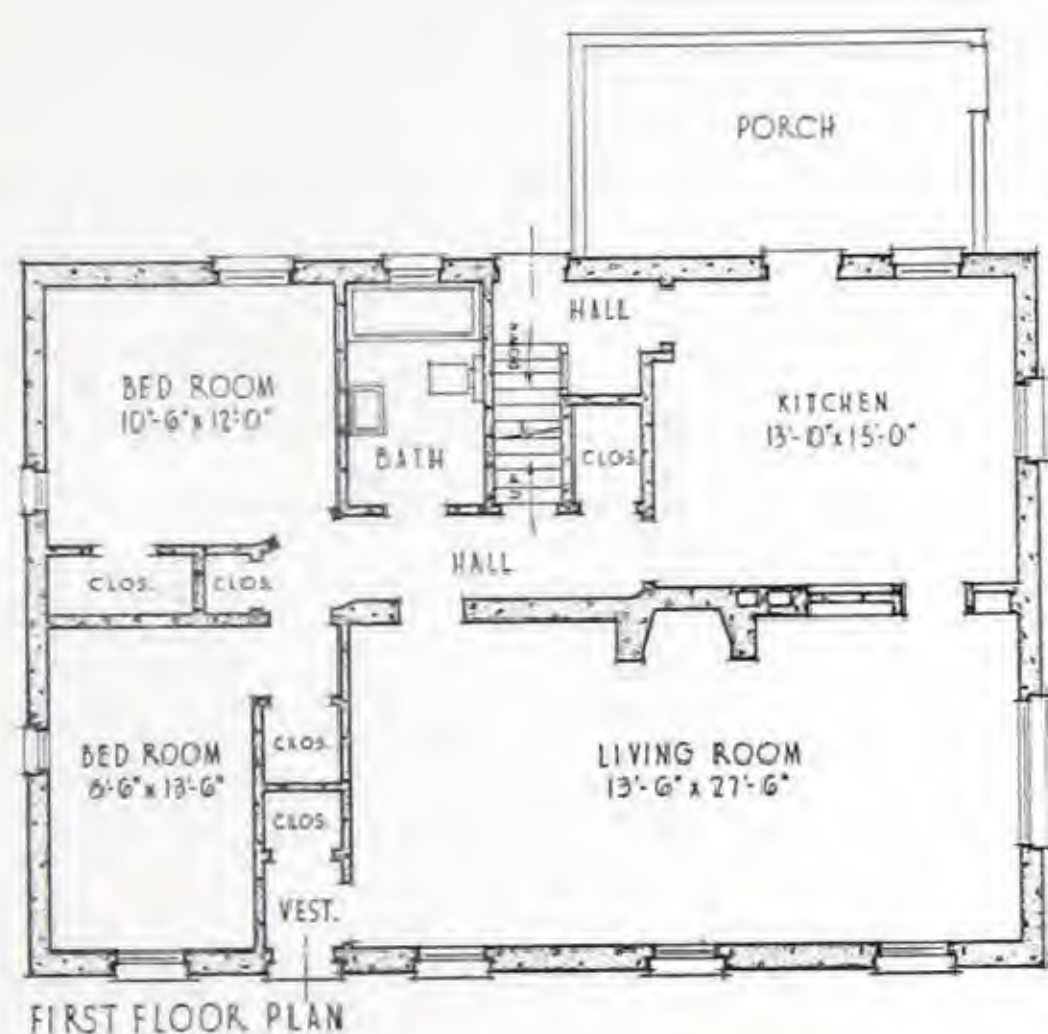
A third type is the ribbed wall, which has features of the previous two. It is a single wall, but the ribs provide an air space when insulating material is applied to the inside face. The exterior, after painting or other treatment, becomes a finished wall. (See next page.)





East Troy, Wisconsin

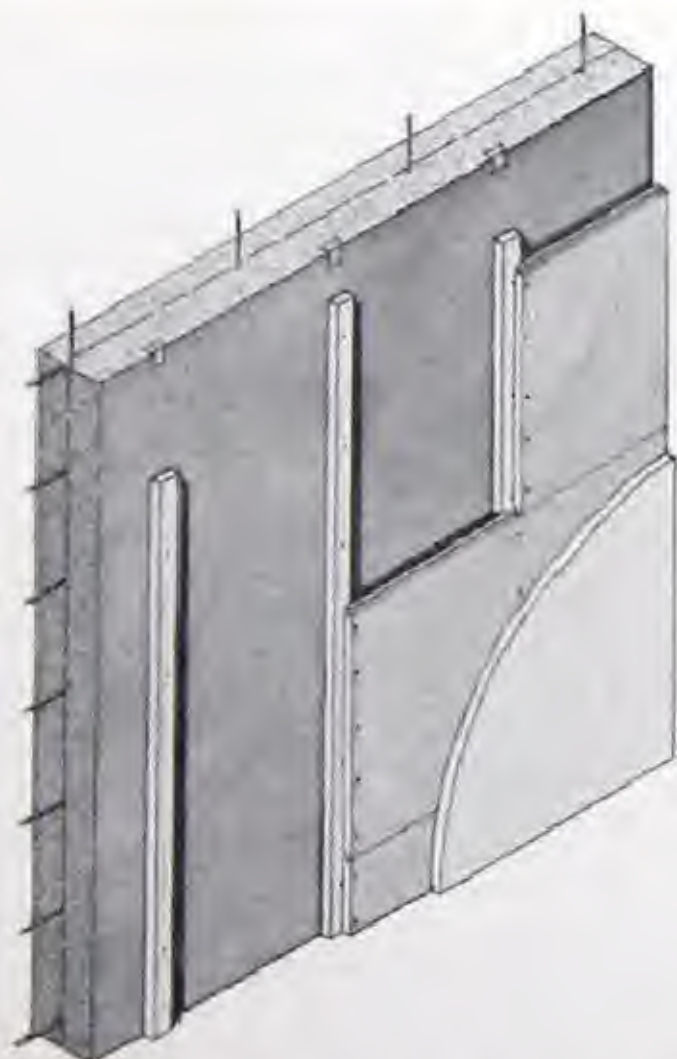
Tronder Johnson, Architect  
P. L. Johnson, Builder



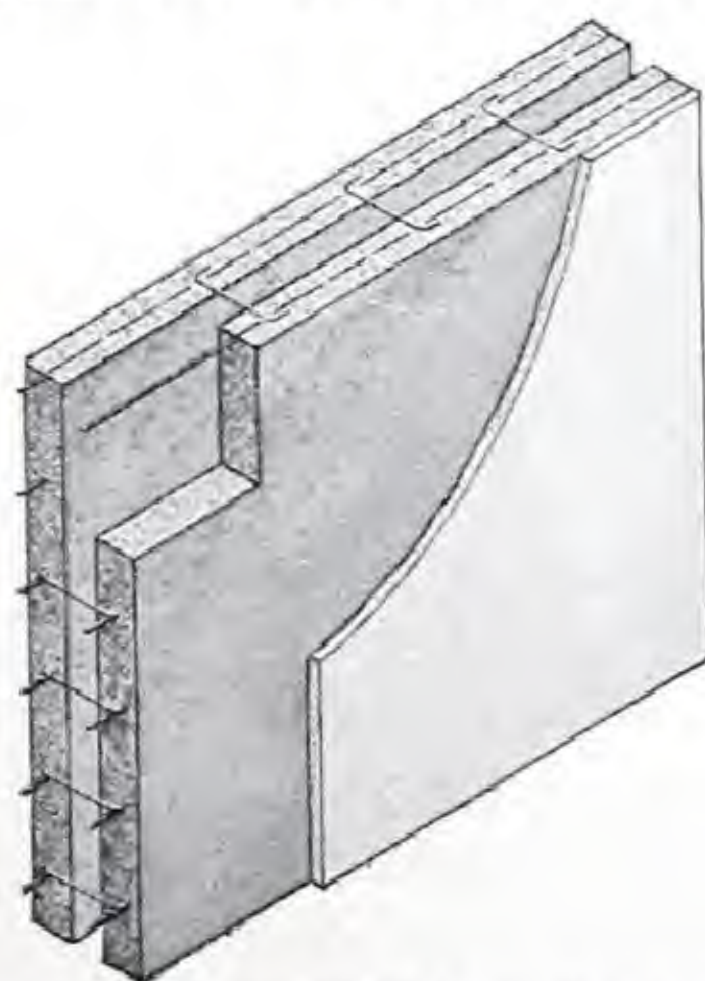
Many people still have the impression that a concrete house with its firesafety, low upkeep and permanence is prohibitive in cost. This, however is not true. Construction methods and materials have been so improved that now all the advantages of concrete construction can be had at little more than the cost of less durable types. Simple in its design, this reinforced concrete home at East Troy is appealing both to the eye and the average pocketbook.



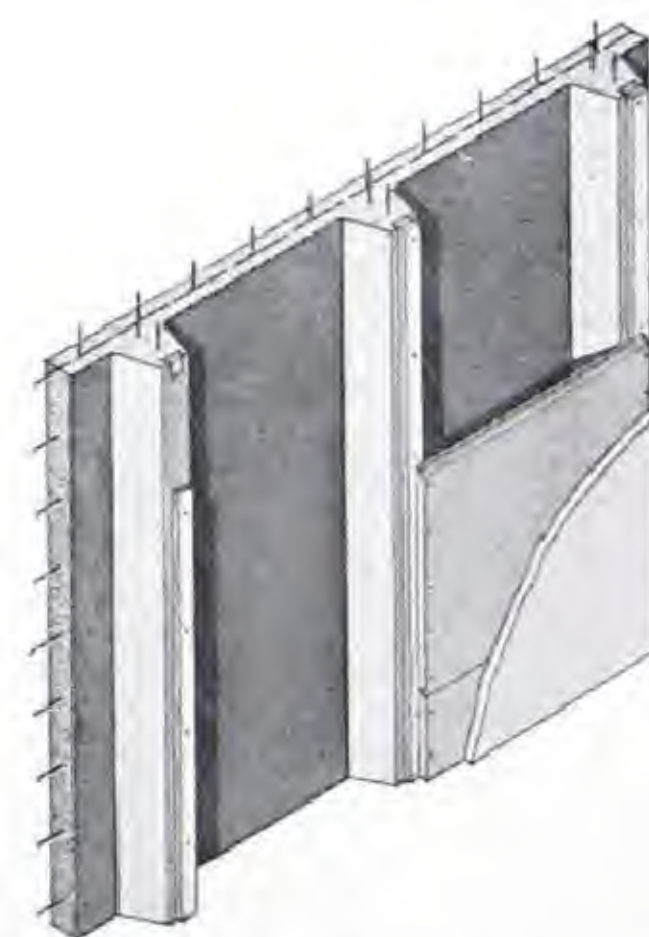
### Three Typical Reinforced Concrete Walls



**SOLID WALL**—furred, rigid insulation and plaster. The air space formed by furring strips plus the rigid insulating material supplies necessary insulation.



**HOLLOW DOUBLE WALL**—plastered direct inside. The air space between the two concrete walls provides insulation. In cold climates additional insulation may be had by filling the space with insulating material.



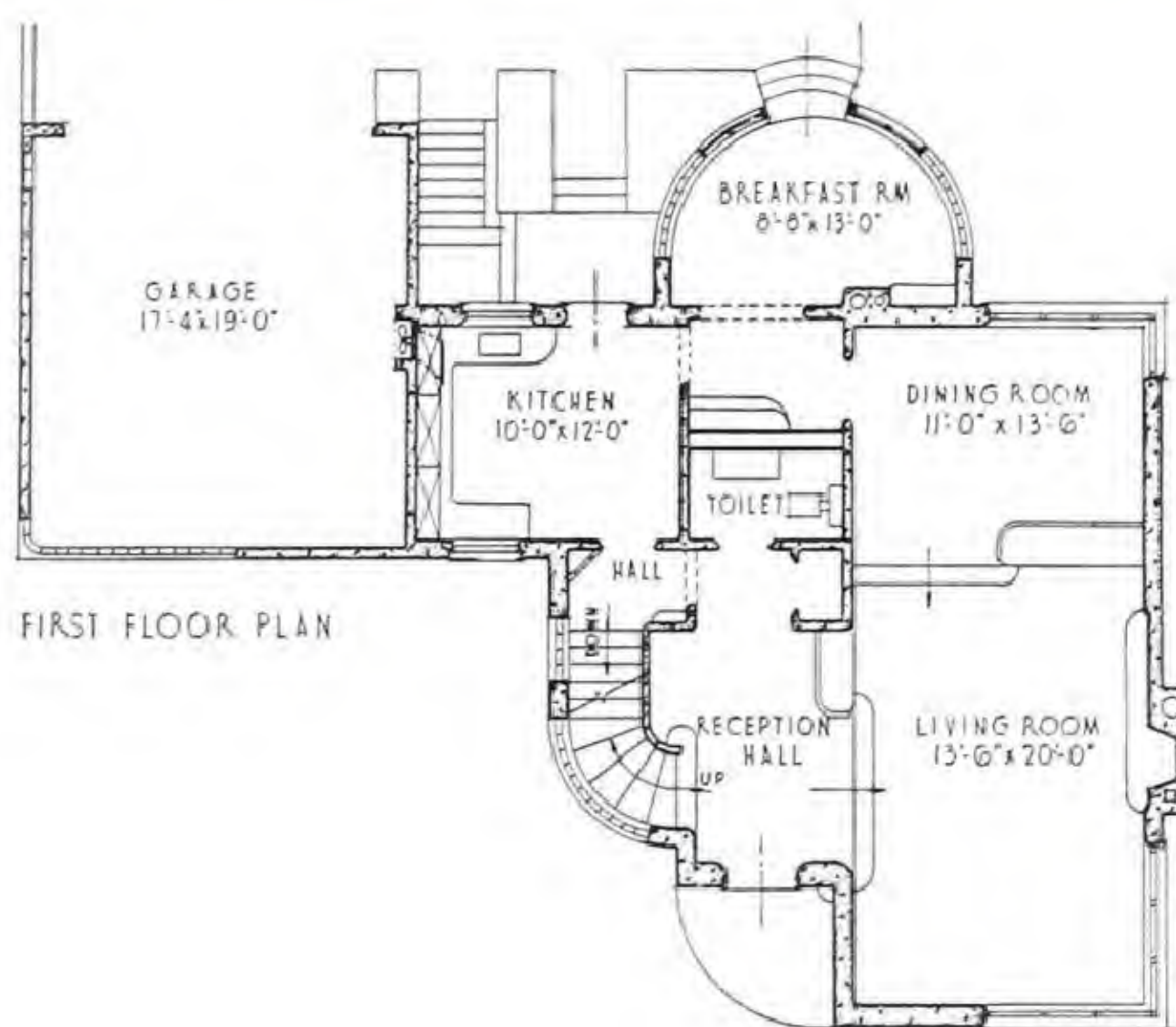
**RIBBED WALL**—furred out on ribs, insulation and plaster. This wall is insulated in a manner similar to the solid wall—by air space plus rigid insulation.





St. Louis, Missouri

Wm. P. McMahon & Co., Architect  
Roberts, Hinkson & Dare, Builders



There is practically no limit to the designs that can be built with reinforced concrete, for not only is it a material of superior strength, but its application is so flexible it will take any form. Massive surfaces, curving walls, long unsupported spans, canopies and even intricate little ornaments—such as are blended together in this St. Louis house—are all easily formed of reinforced concrete. Here a graceful staircase was built of concrete, and the firesafe, concrete subfloor was finished with composition blocks.



### Notes on Insulation of Houses

The home builder who attempts to save money by omitting insulation from the walls and roof of any type of home has a false, mistaken sense of economy.

All materials conduct heat to some degree; therefore it is important to the comfort of the home owner that his house be insulated in some manner to avoid heat conduction. If a house is not insulated, heat will escape through the walls in winter, increasing the cost of keeping the home warm and comfortable. In summer, heat will penetrate into the uninsulated house making it uncomfortably warm. Houses in which air-conditioning is installed must be well insulated so that uniform temperatures can be maintained.

There are many methods of insulating concrete houses and any one or a combination of them may be used, depending on the type of construction of the particular house and on the amount of money available. Generally, methods of insulation fall into three classes: insulation by air space; a combination of air space and insulating material; and insulating material applied directly to the wall with no air space being used. A number of good insulating materials of various types, such as bulk insulation for filling air spaces or pressed insulation for attaching to the inside of the wall, are available. However, it is advisable to seek the advice of an expert on insulation when building a home, to meet local and individual requirements.





San Antonio, Texas

Ayres & Ayres, Architects  
H. B. Zachry, Builder

The bane of the housewife is the difficult job of keeping her home clean when dirt collects in loosely-fitting joints, under warped baseboards and in "hard-to-reach" places. In a properly built concrete house, such as this one at San Antonio, warping and loose joints are reduced to a minimum. With dirt kept out in the open, cleaning is hardly more than a lark.

Page 7



### Reinforced Concrete Floors

Nothing indicates more clearly the importance of reinforced concrete floors than their wide use in homes of all types of construction. The reasons for this are many-fold.

First, the concrete floor prevents fires spreading from the basement—the source of most home blazes—up through the rest of the house. It is thus the greatest factor in home firesafety.

Second, the rigidity of a concrete floor eliminates the sagging, warping and settling, which causes squeaking floors, gaping baseboards, and causes windows and doors to stick.

Third, it is the finest base for any type of floor finish—wood, carpeting, linoleum, tile, cork, composition or terrazzo. The finest floor coverings may be applied over a concrete subfloor with the assurance that they will give maximum wear because of the even, smooth surface, that they are fully protected from termites, and that they have as a base an effective barrier against fire.

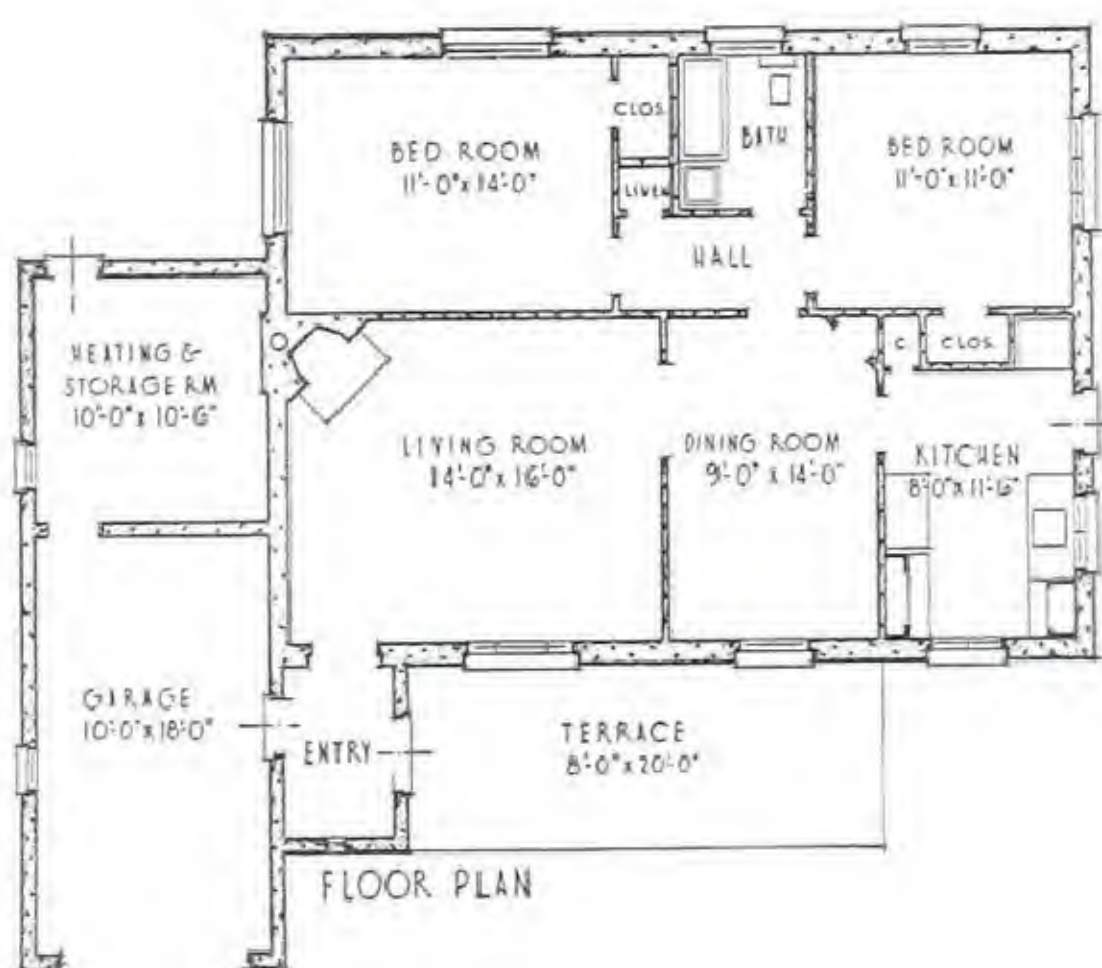
There are several acceptable types of reinforced concrete floors, any of which may be economically used in home construction. Three of these are discussed on following pages.





Bethesda, Maryland

Vacuum Concrete Corp., Designer



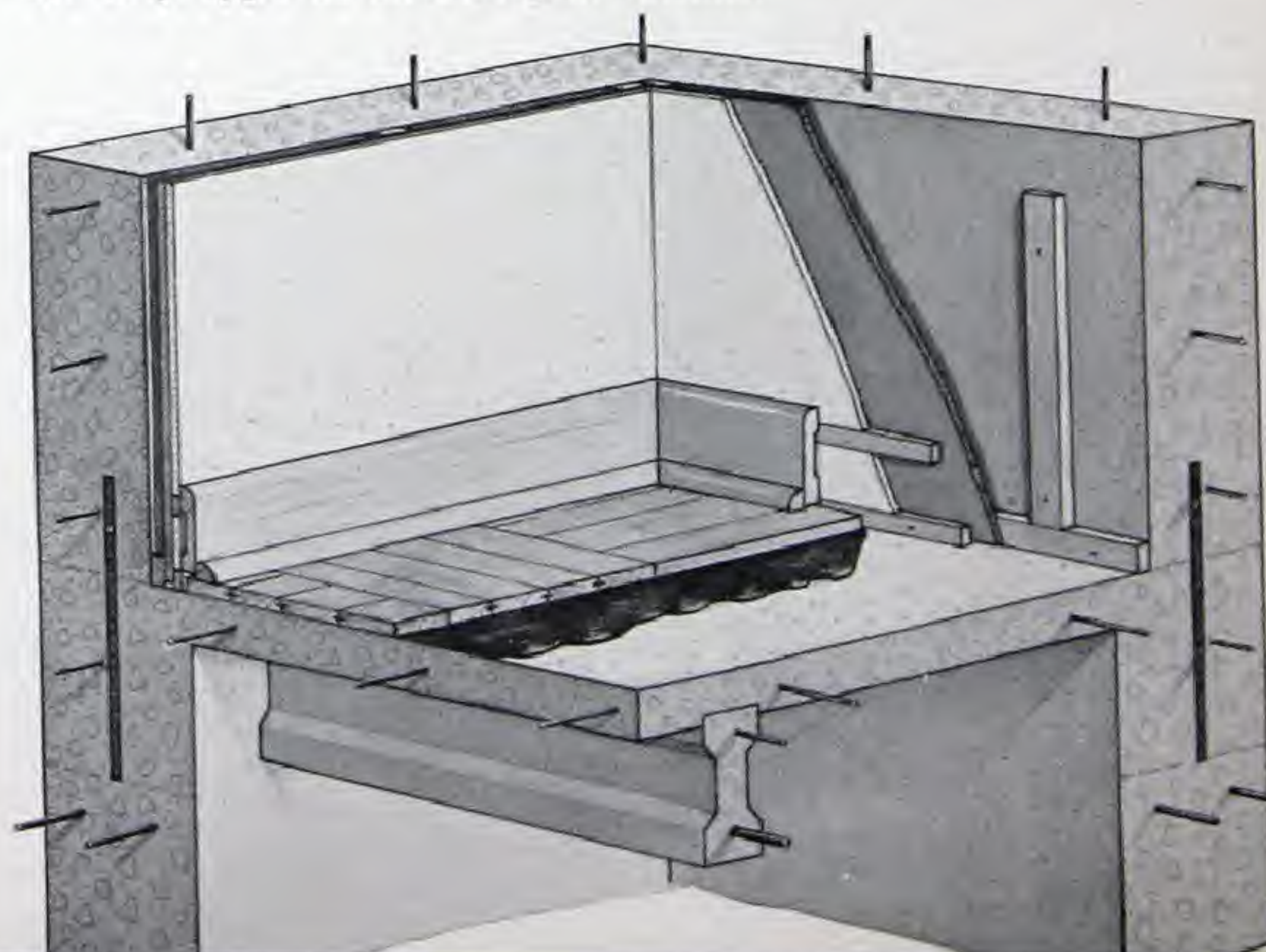
Whether people who build a home will live in it the rest of their lives or for some reason will sell it, their purchase should represent a safe, sound investment. Well-built concrete houses are wise investments in that they will retain their original appearance and strength for a long time, and even after years of service will not require heavy up-keep expense.



Precast concrete joists provide interesting ceiling effect.

#### PRECAST CONCRETE JOIST FLOOR

A popular type floor in current building is made by placing a reinforced concrete slab over precast reinforced concrete joists. The joists may be exposed, if desired, to form a beamed ceiling. The floor slab becomes an excellent base for any type of covering or finish.

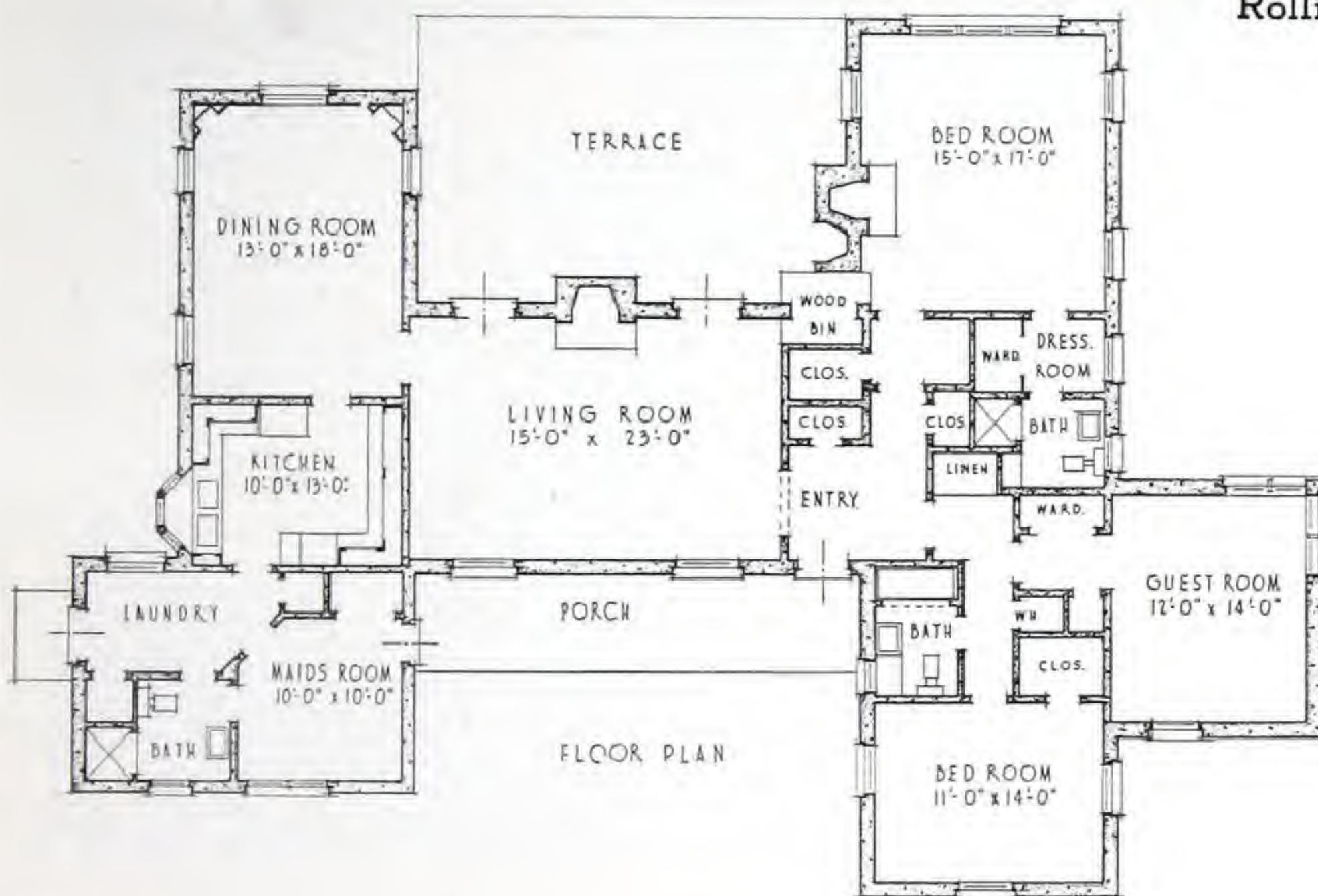






Rolling Hills, California

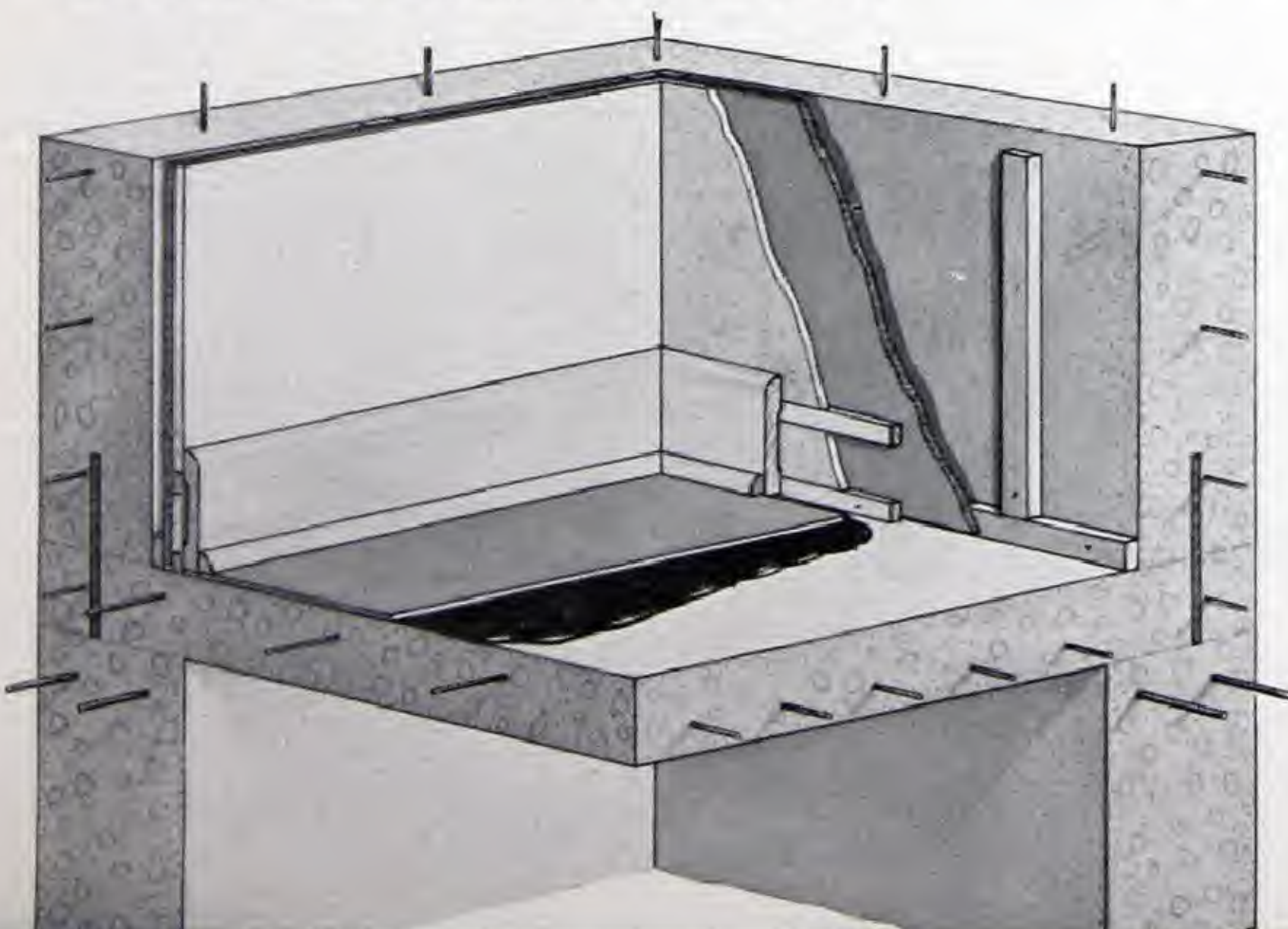
James R. Friend, Architect  
Harman-Pacific Co., Builder



When the sun beats down "hot as blazes," nothing is so delightful as to step into a cool house. Concrete houses properly constructed with standard insulation are especially cool. In California this concrete house at Rolling Hills is a pleasant retreat from the midday heat of a southern sun. In northern climates the extreme changes from torrid heat of summer to the icy blasts of winter are not felt as keenly in concrete houses.

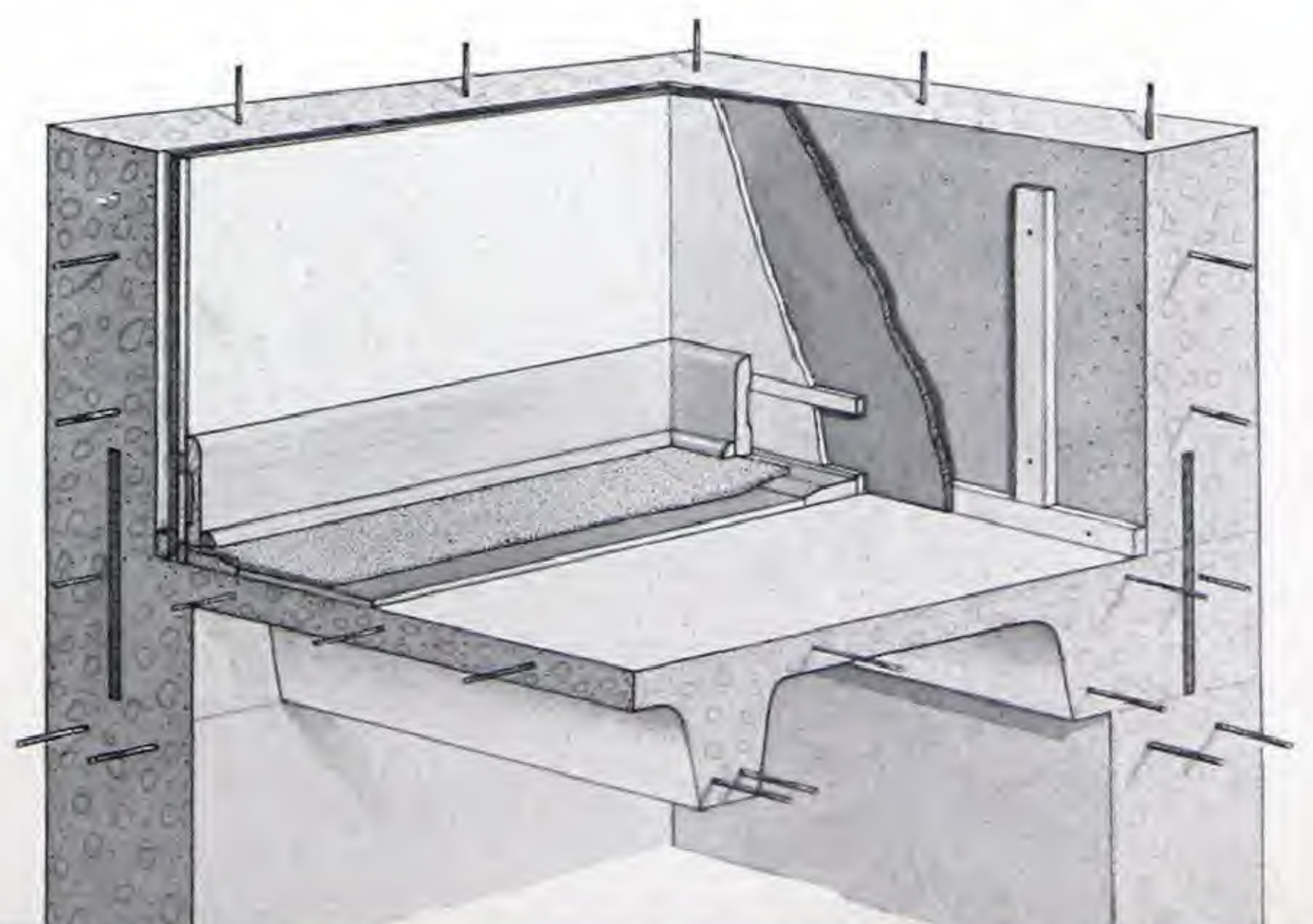
#### SOLID SLAB FLOOR

The solid slab is generally about 4 to 6 in. thick and is built of reinforced concrete. It provides a flat ceiling which may be plastered, painted or stained to suit individual taste. As indicated in the drawing, it is reinforced with bars producing a firm, sag-proof floor.



#### CONCRETE JOIST CONSTRUCTION

In this type of floor the joist is cast with the slab by use of pan forms. Reinforcement is located in the slab proper and in the rib. These joists may also be exposed as beams, and painted or stained to please the fancy.



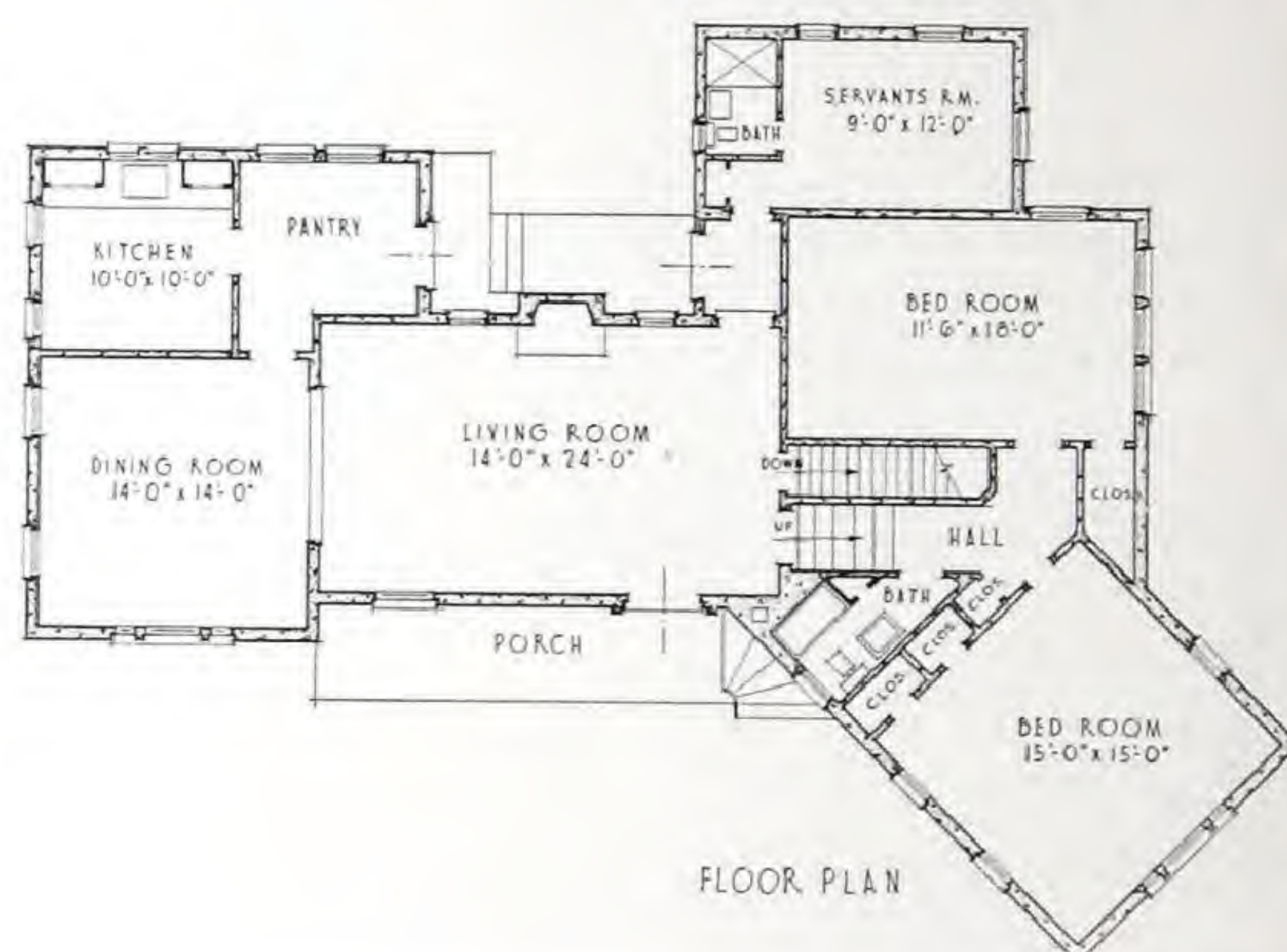




Austin, Texas,

Glen C. Wilson, Architect  
Robert O. Smith, Builder

The envy of all the neighbors is the home that is livable as well as a delight to the eye. To be livable a home not only should be conveniently arranged, but it must never be a worry to its owners. Folks who own concrete homes similar to the Austin house enjoy living in them because concrete construction protects them from fire and storm; concrete floors and walls won't need expensive repairs, and properly-built concrete reduces the problem of ill-fitting joints, gaping baseboards and crannies where dirt can hide to make cleaning a hard job.



Linoleum is easily applied to a concrete floor.



Placing wood finish on concrete subfloor.



Six tropical hurricanes roared through Tampa, Fla., during the last half-century, each time destroying homes on every hand, but they didn't faze this solid concrete home, which is standing today just as young and strong as when it first was built in 1883.



At Chappaqua, N. Y., is a reinforced concrete house built in 1852 for Horace Greeley, its staunchness a tribute to the foresightedness of a great man.



### The Firesafe Roof

To provide fire protection consistent with the rest of the reinforced concrete home, the roof should be fire-safe. For modern, flat-roofed houses, reinforced concrete construction similar to that for floors is generally used. This is covered by a built-up roofing.

When pitched roofs are preferred, firesafety is achieved through the use of fire-resistant roof coverings including cement-asbestos shingles and concrete roofing tiles, available in many sizes, shapes and colors to match architectural requirements.



Overlooking the city of Des Moines is this spacious reinforced concrete home built to fulfill the owner's wish for the most up-to-date residence that could be erected. From the impressive exterior design to the minutest details inside, the house was carefully planned to provide the utmost in comfortable, happy living.

In the walls, solid concrete construction supplied advantages which made concrete the desirable building material. Its adaptability to any form makes it easier and more economical to achieve the desired architectural effect. Its permanence insures a low maintenance cost. Its strength provides protection against storms and its fire-safety eliminates the danger of loss by fire.

The concrete floors not only make this a quiet house, but further insure firesafety and provide rigidity and long



Des Moines, Iowa



life with a minimum of depreciation. Safer movement from floor to floor with ramps also built of concrete can be molded in any form. It can be structurally strong, it can be curved walls, projecting windows and all the other features of achievement in modern home building.

Whether your home is to be like the Des Moines house or a different one, it can be built easily and economically.

### Wall Finishes for Reinforced Concrete Homes

In large reinforced concrete buildings it is permissible to use deep formed detail such as fluting, reveals and molded bands; but houses, being smaller, do not ordinarily lend themselves to extravagant decoration. However, a true reinforced concrete wall should have a characteristic texture, and this may be determined by the type of material in which the concrete is formed.

Reinforced concrete walls may be smooth, rough or deeply textured, depending upon requirements of the architectural styles. These are accom-

plished by proper selection of form faces. Smooth forms such as metal, plywood or smooth-finish lumber are used in producing smooth, even surfaces. Rough-surfaced forms produce rough textures. Interesting effects are often produced, for example, by the impression of the grain and joint-lines of form boards.

The appearance of a reinforced concrete house depends much upon the selection and execution of the wall texture. On pages 14 to 22 are shown examples of nine popular wall textures.



This type of formed detail is not appropriate for concrete houses.





Kraetsch & Kraetsch, Architects  
Garner & Stiles, Builders

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Because reinforced con-  
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an imposing mansion like  
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ith concrete.



### How to make Concrete Wall Textures

All concrete textures shown in the sample panels at the bottoms of the following pages were obtained by using concrete thoroughly mixed in the proportion of 1 part cement,  $2\frac{1}{4}$  parts sand and  $3\frac{1}{4}$  parts  $\frac{3}{4}$ -in. gravel. The sand was well graded, with 10 to 15 per cent passing a 50-mesh screen. Six gallons water per sack of cement produced a mixture readily puddled and worked into place by hand. Form surfaces exposed to concrete were given a light coat of thin form oil. All surplus oil was wiped off before concrete was placed.

When the concrete was well hardened, the surfaces were given two coats of plain white portland cement paint rubbed in thoroughly with a stiff-bristled brush, and kept damp or wet for 48 hours. The paint had the consistency of fairly thick cream.



Mechanical finishing produces smooth surface.

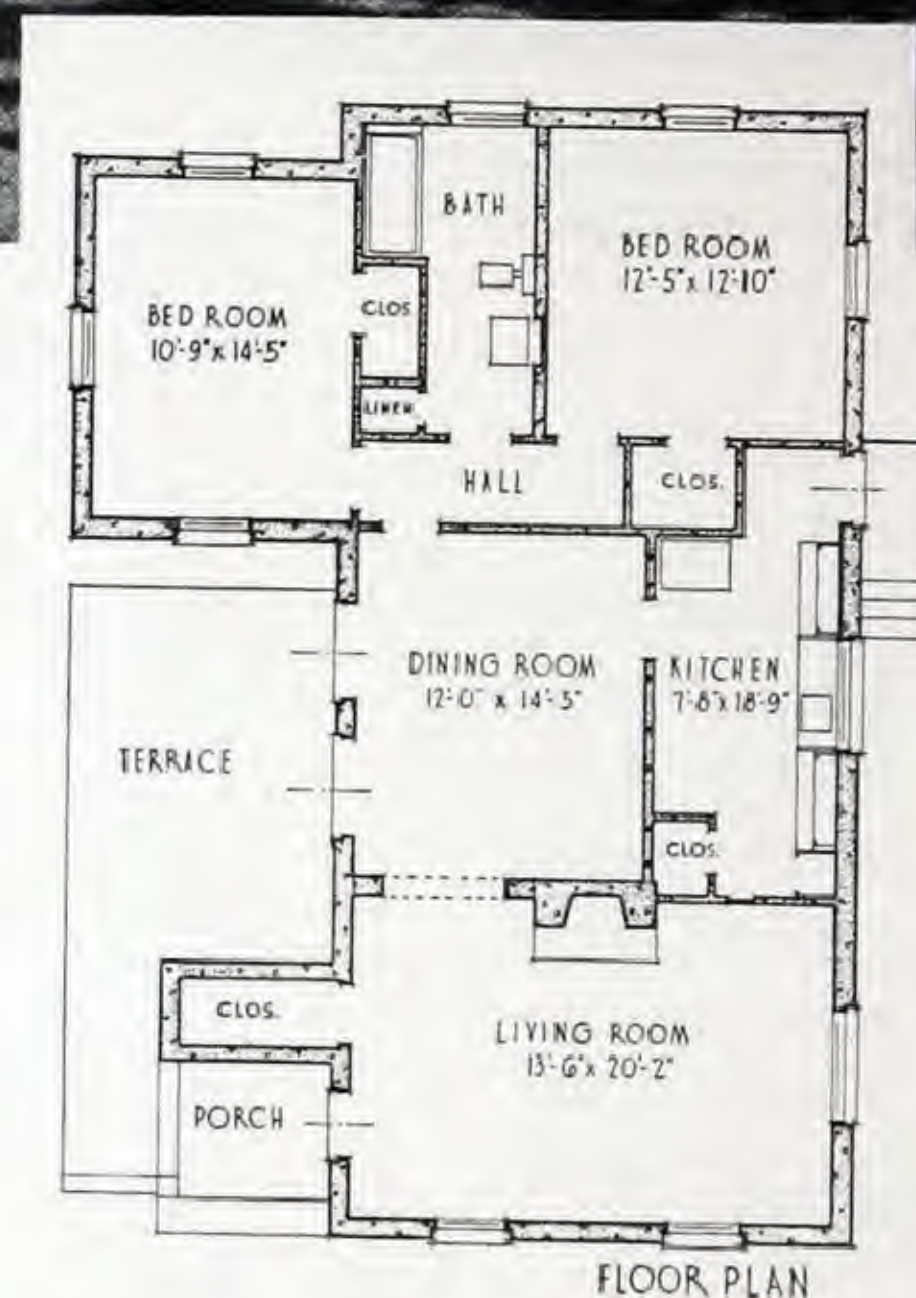




H. B. Zachry, Builder

San Antonio, Texas

Important to any home owner is the assurance that his house will protect him from the danger of fire and storm. Concrete construction provides that assurance, since concrete walls and floors will not burn and the strength of a well-built concrete house will resist the pressures of driving wind and rain. That is why people who own concrete houses, enjoy peace of mind and find living in them ever a comfort.



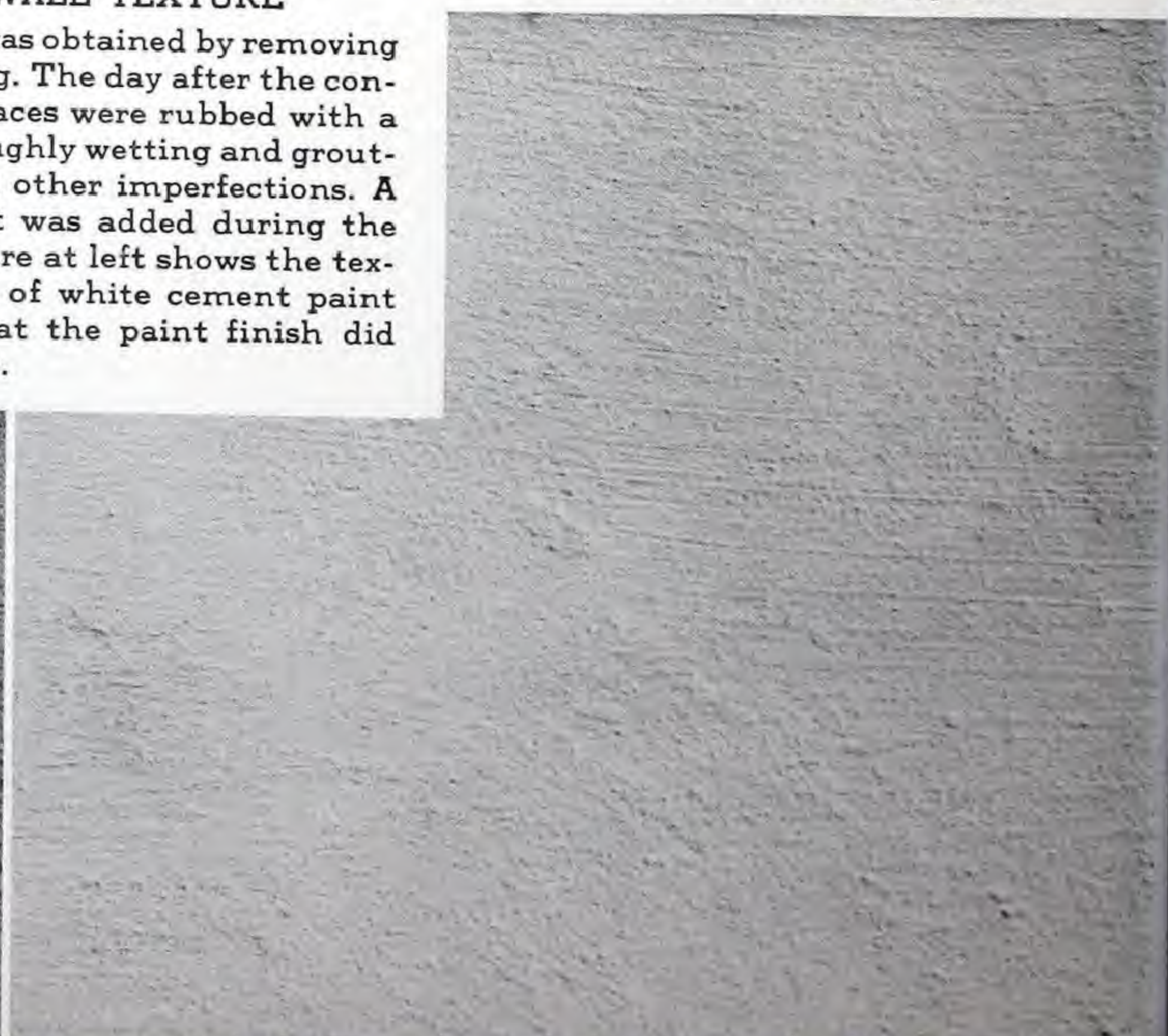
Finish—Wood floated.



#### FINE, SANDY WALL TEXTURE

This sandy surface was obtained by removing form marks by rubbing. The day after the concrete was placed, surfaces were rubbed with a wood float after thoroughly wetting and grouting wall tie holes and other imperfections. A little water and grout was added during the rubbing process. Picture at left shows the texture before two coats of white cement paint were applied. Note that the paint finish did not efface the texture.

Finish—Wood floated, painted.







Wherever concrete houses are built, people who see them are quick to realize the desirability of such construction. At Spokane, the reinforced concrete home shown below hardly had been completed when neighbors and visitors ordered the builder to construct two more like it (one shown at left). Such recognition bespeaks the value of concrete construction.

Spokane, Washington  
G. A. Pehrson, Architect  
Earl Cummings, Builder



Finish—Wood floated and stoned.

#### SMOOTH RUBBED TEXTURE

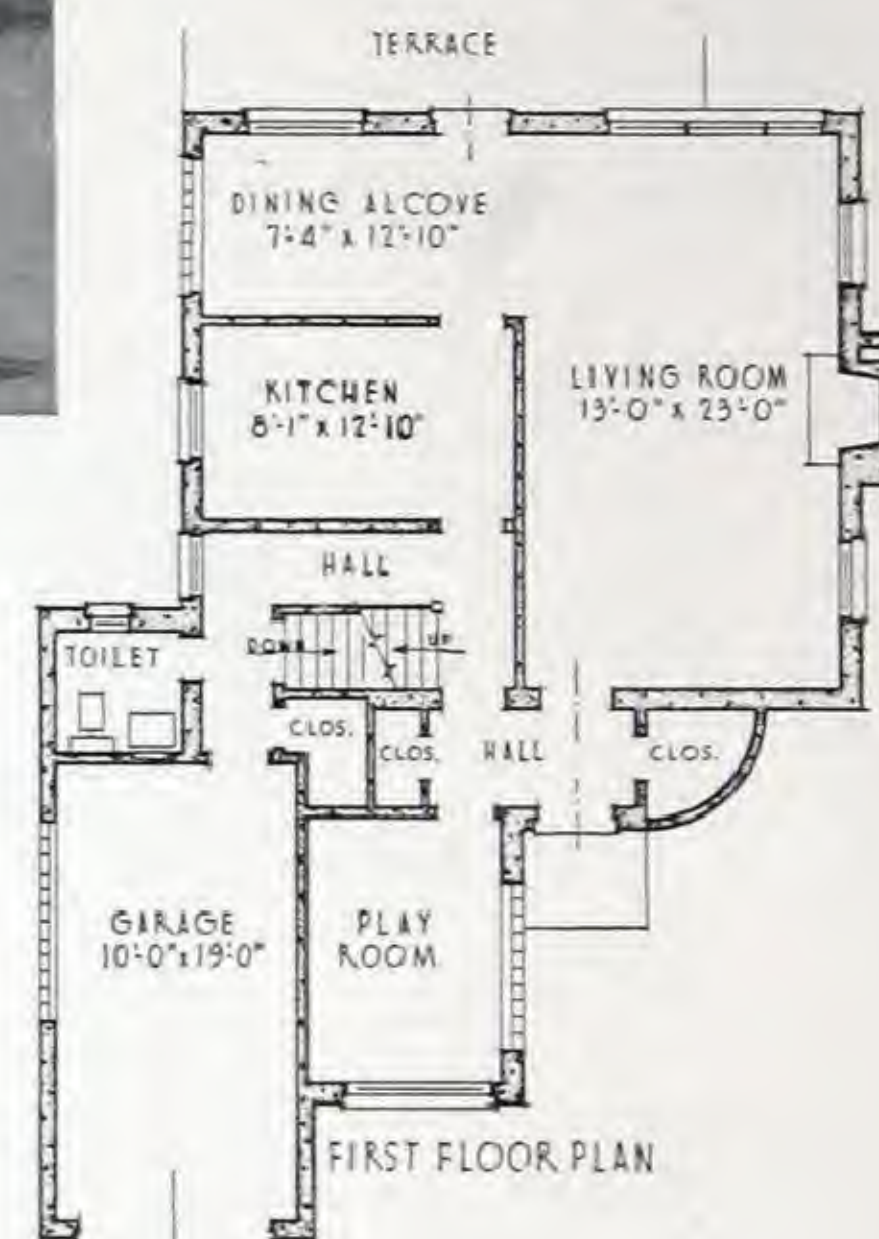
Smooth rubbed texture was obtained by rubbing the fine, sandy wall texture (opposite page) lightly with a carborundum stone after the concrete was well hardened. Smooth finishes such as this are quite proper for homes of modern design built quite close to the street. When homes are at some distance from thoroughfares, a more vigorous texture is probably desirable, even for modern-styled houses. The white paint provided smoother texture.

Finish—Wood floated, stoned and painted.





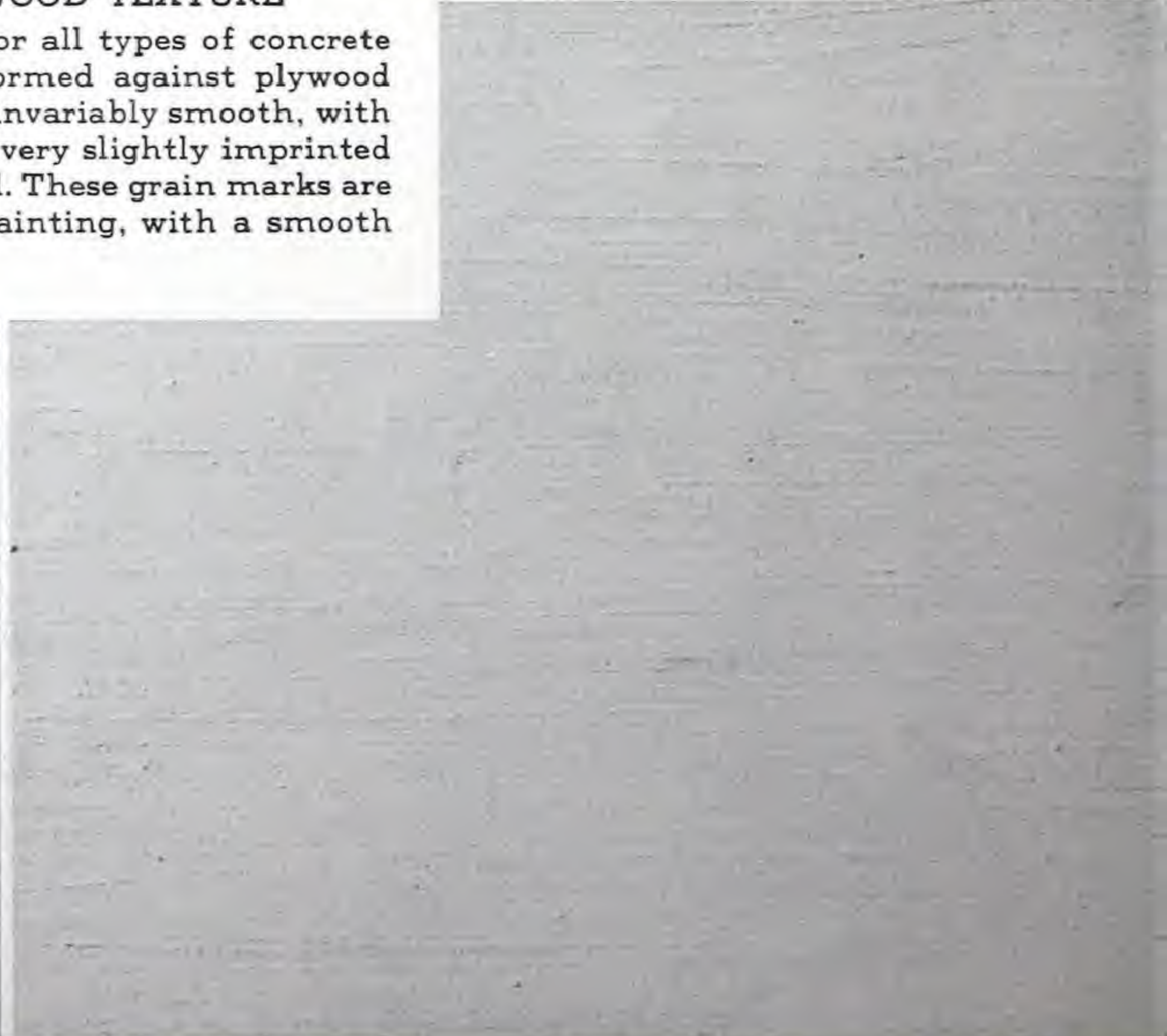
South Bend, Indiana  
Art Jordan, Builder



It is a relief to know that when you move into your new concrete house, it won't be necessary to worry about repairs or exterior decoration for a long time. When a concrete house is carefully designed and constructed, it will give long years of service and ask very little in return. Even decorating is not often necessary if the exterior surface of the house is painted with cement paint, for the cement becomes an integral, permanent part of the concrete beneath it.

#### SMOOTH PLYWOOD TEXTURE

Extremely popular for all types of concrete walls is the surface formed against plywood panels. Such walls are invariably smooth, with occasionally a pattern very slightly imprinted by grain in the plywood. These grain marks are generally covered by painting, with a smooth wall the result.







Rosedale, Mississippi

G. C. Gardner, Builder

**F**or ten years this solidly-built concrete home in Mississippi has served its owners without worrying them about upkeep. Today it is as valuable a structure as when it was built. And because the concrete house is very slow to depreciate, it will maintain its appearance and value and give trouble-free service for many more years.

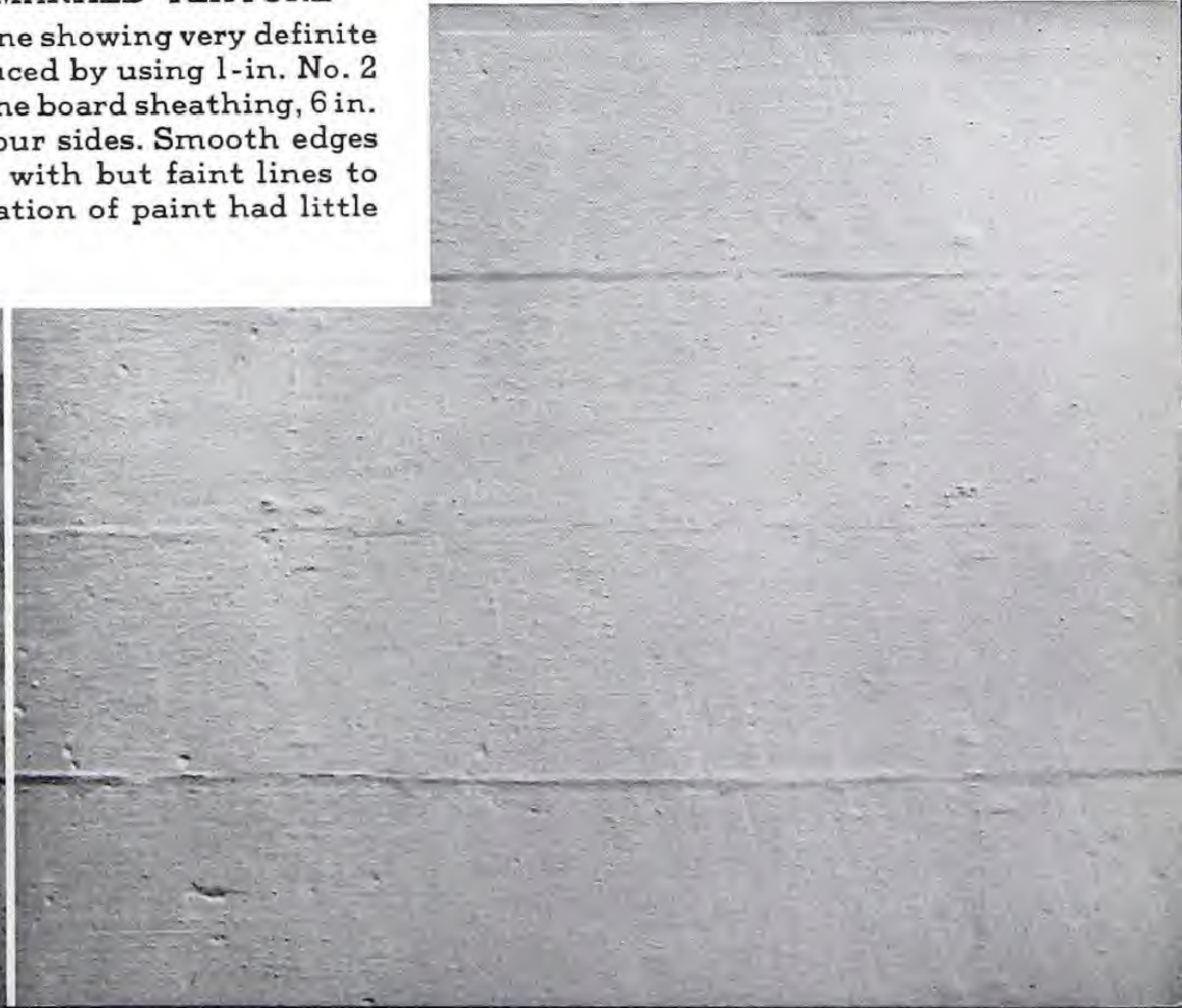
Finish—Board-marked.



#### SMOOTH BOARD-MARKED TEXTURE

A smooth wall, but one showing very definite form marks, was produced by using 1-in. No. 2 square-edged yellow pine board sheathing, 6 in. wide and surfaced on four sides. Smooth edges permitted tight joints with but faint lines to catch shadows. Application of paint had little effect on the texture.

Finish—Board-marked, painted.



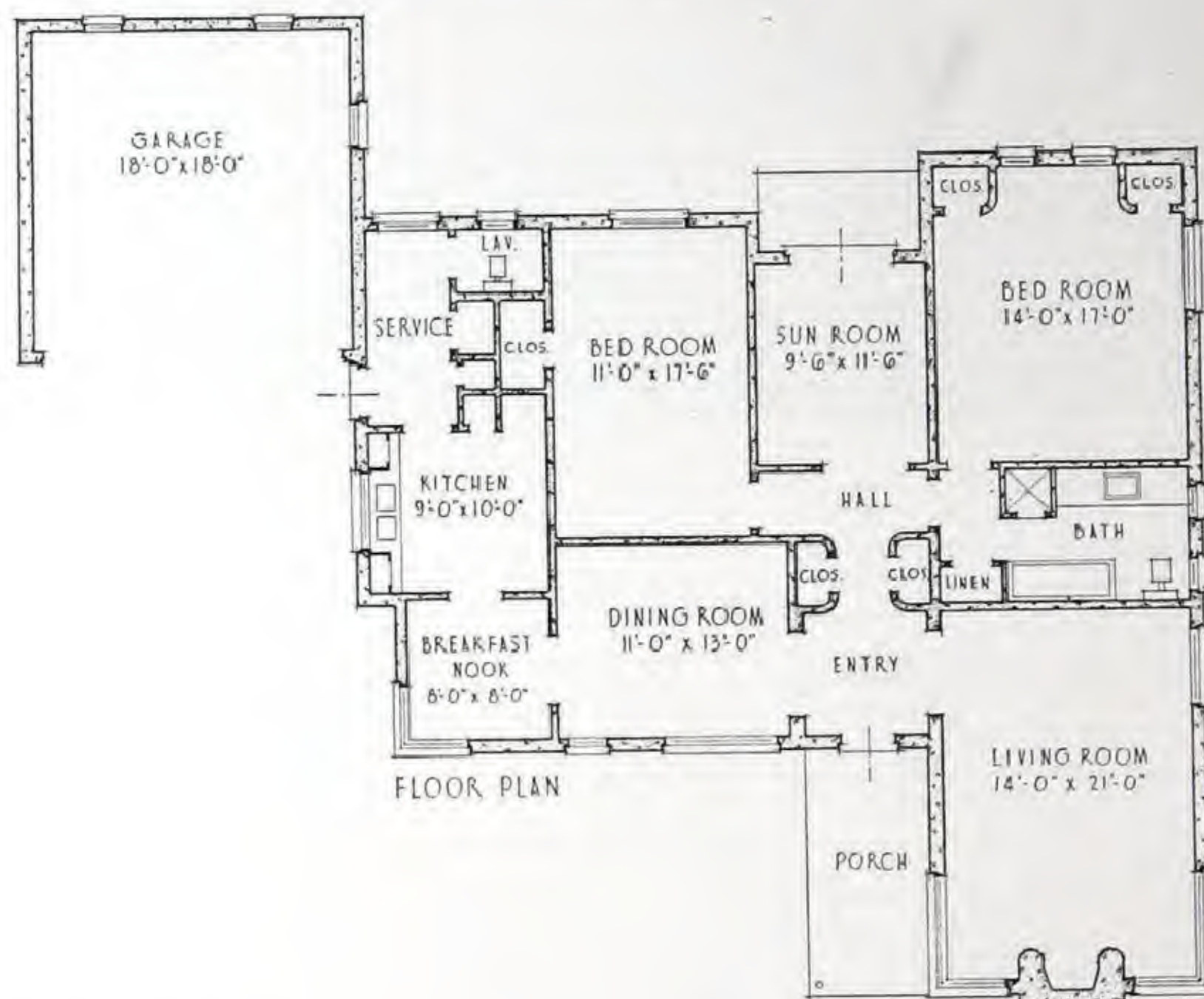




Monterey Village, San Fernando Valley, California

Theodore Jacobs, Architect  
Stoltz Construction Co., Builder

**T**ermites can never damage a concrete house because they can't eat concrete. When walls, floors and foundations are built of concrete, the home owner can forget about the danger of having his house eaten away by those destructive pests.

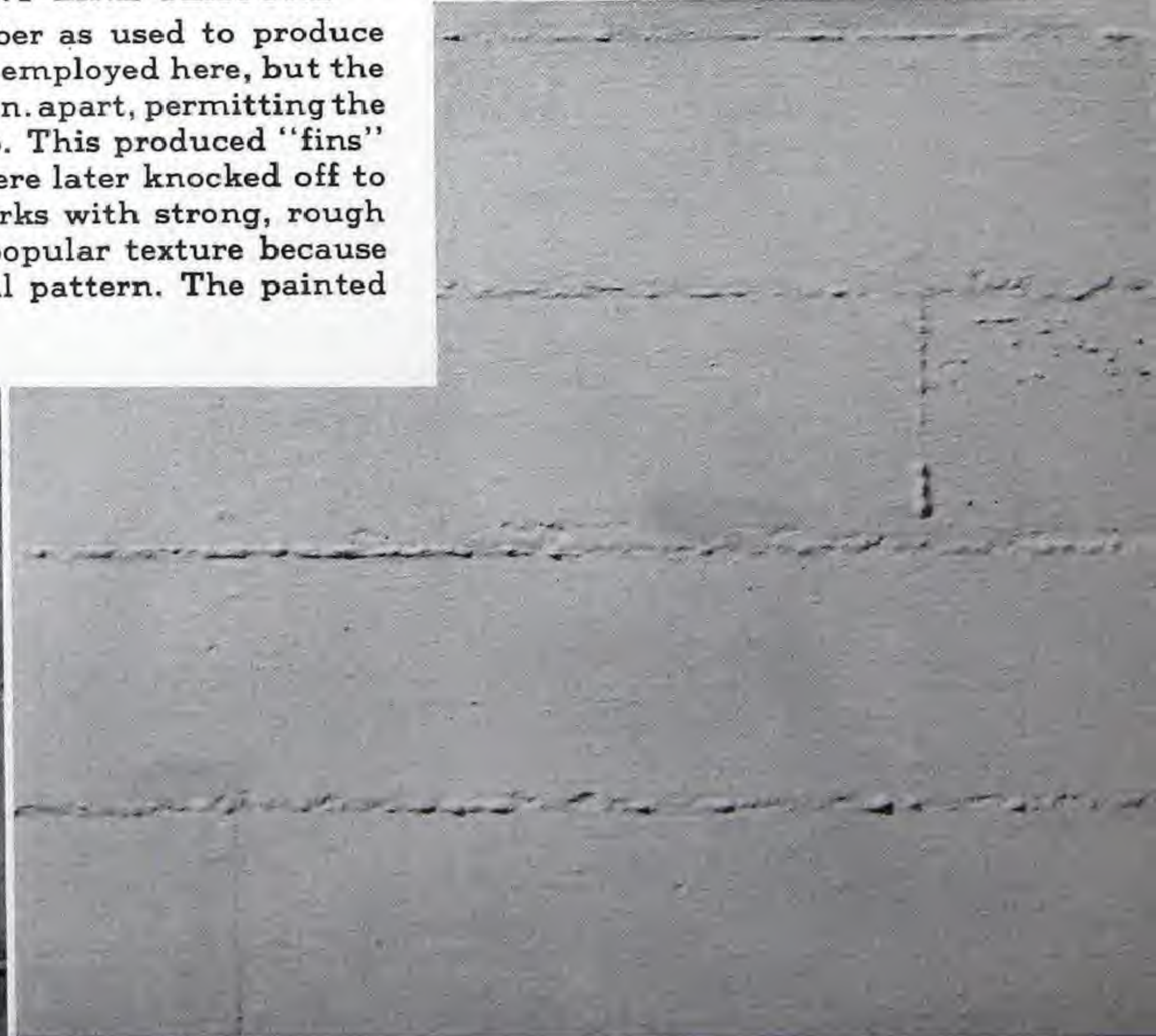


Finish—Rough joint-line.

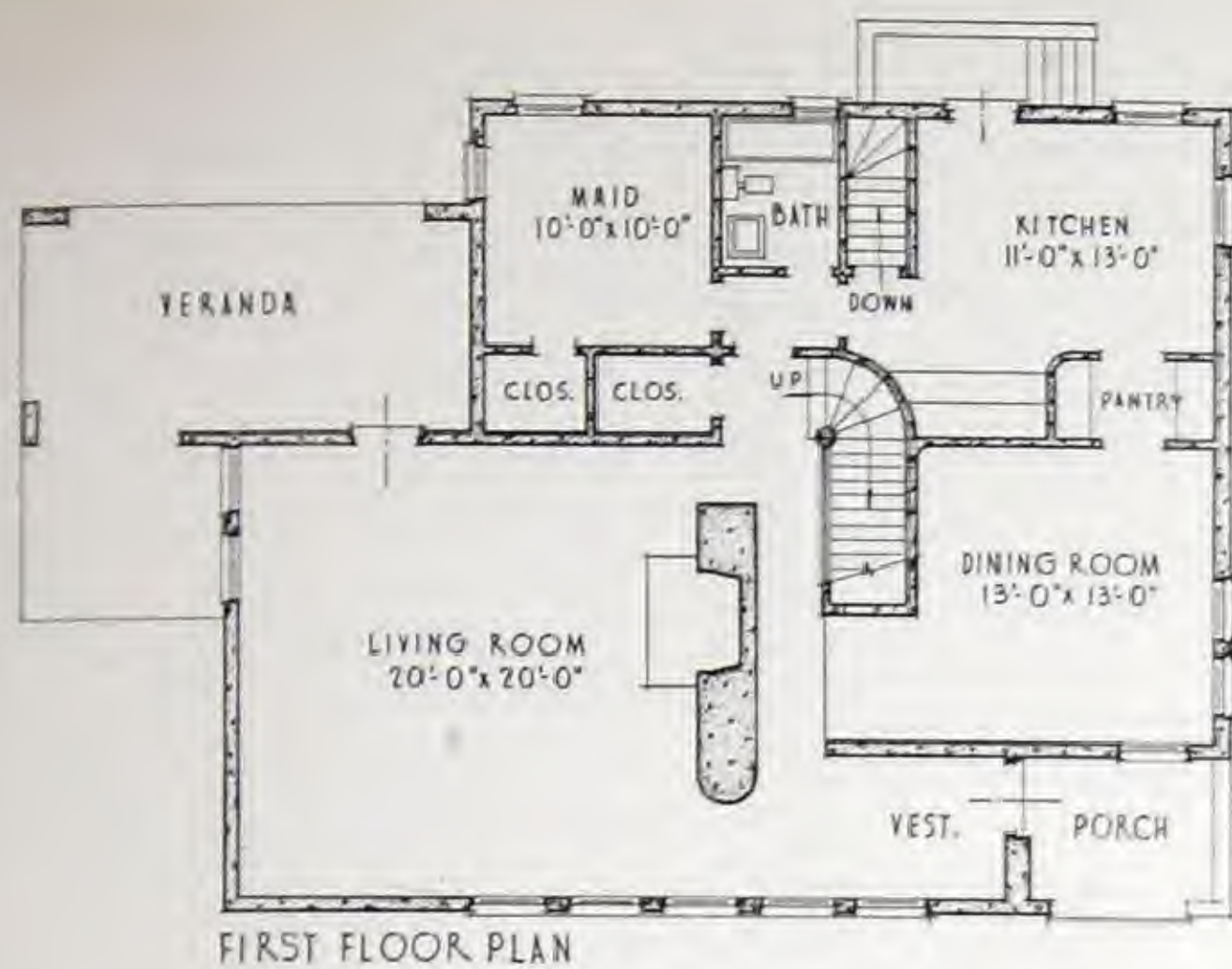
#### EMPHASIZED JOINT-LINE TEXTURE

The same form lumber as used to produce texture on page 17 was employed here, but the boards were spread  $\frac{3}{16}$  in. apart, permitting the concrete to fill the gap. This produced "fins" on the surface which were later knocked off to give smooth board marks with strong, rough joint-lines. This is a popular texture because of its strong horizontal pattern. The painted wall is at right.

Finish—Rough joint-line, painted.







Westport, Connecticut

Barry Byrne, Architect  
A. H. Olmstead, Builder



**L**oaning agencies naturally prefer to invest their money in structures that are sure to remain in sound condition throughout the life of the loan. Properly-built concrete construction is approved construction; it will stand throughout the longest term loan. Its

firesafety and resistance to deterioration and damage by storms and insects make it an especially good investment for the owner and the financing agency. Both the walls and the floors of this Connecticut house are built of reinforced concrete.

Finish—Grain-marked.

#### GRAIN-MARKED TEXTURE

By using 1-in. vertical-grained (quarter-sawn) square-edged fir boards it was easy to form this vigorous grained texture. It is a pleasing surface, whether painted or not. When such grain-marked concrete is exposed inside a home, it may be stained to simulate natural wood colors. The decorative possibilities of this surface are intriguing for either exterior or interior work.

Finish—Grain-marked, painted.





Coeur D'Alene, Idaho

Richard Eddy, Architect  
Walt Varnum, Builder

Because concrete will not burn, houses built with this firesafe material receive low fire insurance rates. In most cases, insurance on concrete homes is lower than on houses of ordinary construction. At Coeur d'Alene this modern home is firesafe because its walls and floors are built of solid concrete.



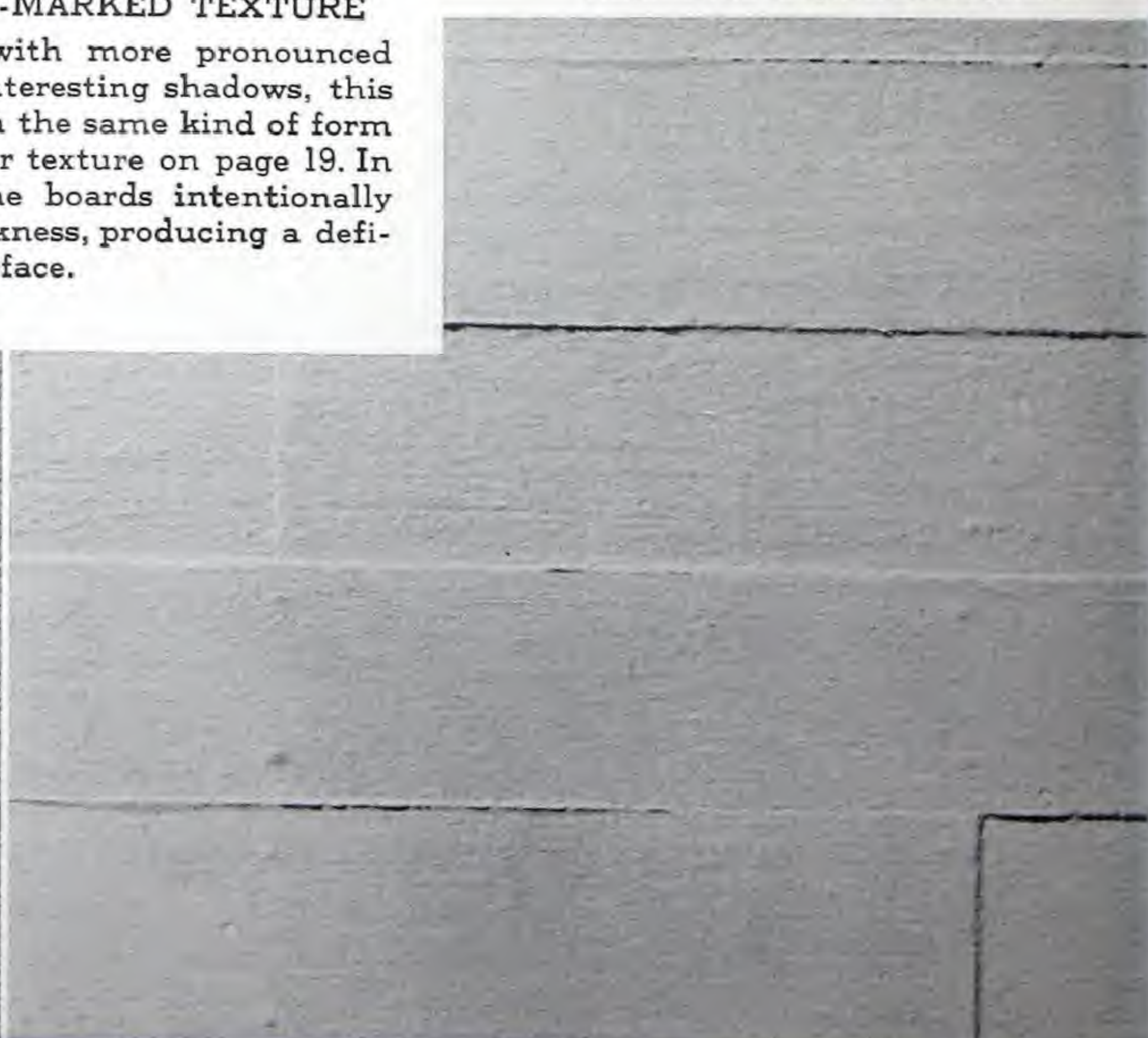
Finish—Grain and joint-marked.



#### GRAIN AND JOINT-MARKED TEXTURE

Deep-grained but with more pronounced joint-lines to catch interesting shadows, this texture was made with the same kind of form lumber as was used for texture on page 19. In this case, however, the boards intentionally were of unequal thickness, producing a definitely uneven wall surface.

Finish—Grain and joint-marked, painted.







A trim concrete staircase leads up from a reception hall enclosed by exposed concrete partitions.

## INTERIORS

The interiors of concrete houses can be treated in any desired manner. Walls can be painted, plastered and calcimined or papered, paneled, or covered with any other materials. Concrete floors can be covered directly with linoleum, all-over carpeting, composition blocks or wood. If the concrete is to be left exposed, it can be beautifully textured and either colored, painted or stained. Graceful concrete stairways and balconies can be built, as well as concrete mantels, fireplaces and window seats. The possibilities are only limited by the ingenuity of the designer.



An interesting texture and pattern was achieved in the surface of this concrete floor.

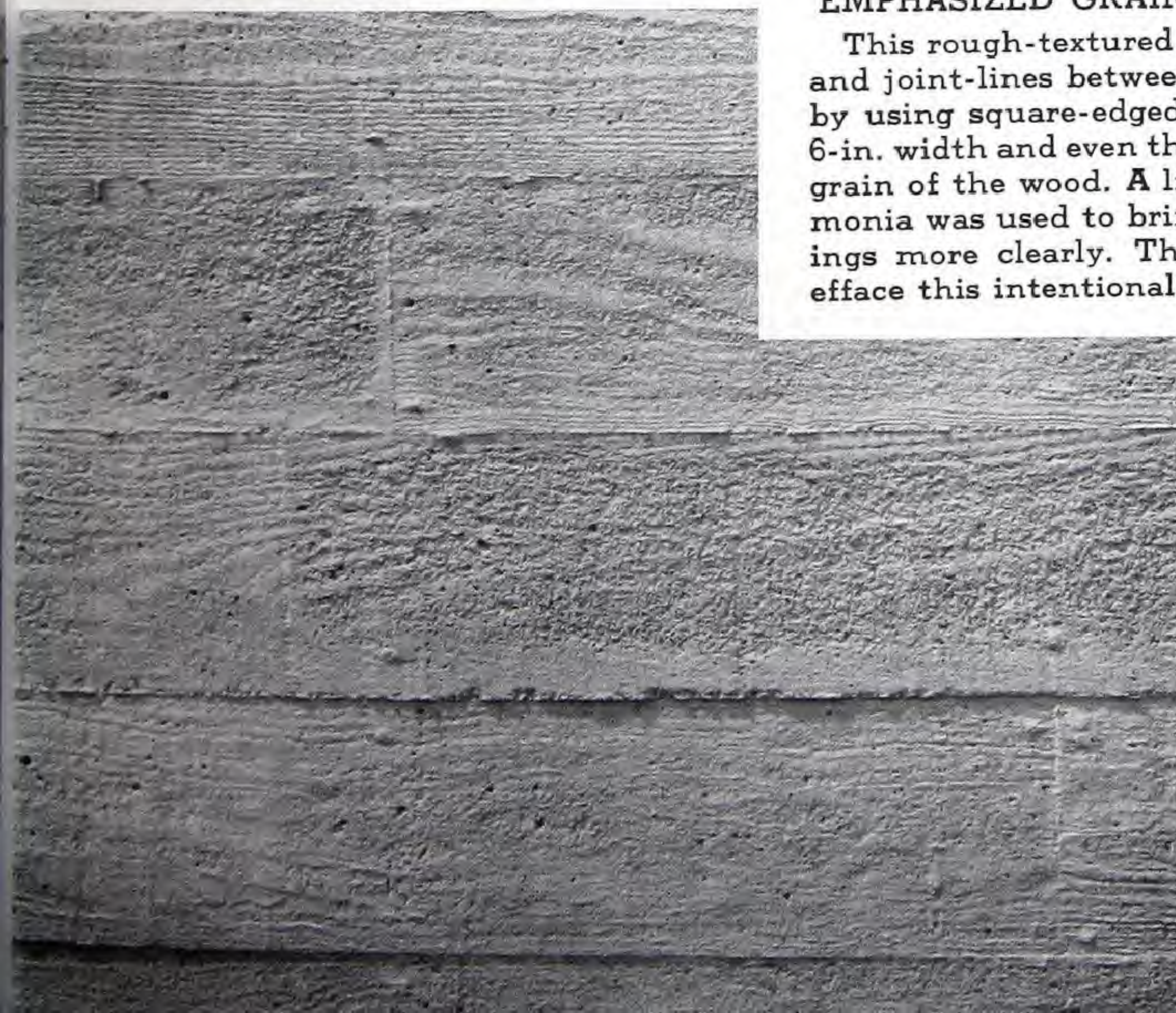
A concrete hood over the fireplace, blended into the concrete walls, lends a pleasant simplicity to the bed room.



For an attractive effect in this basement recreation room, the exposed precast concrete joists were set off by black paint on the ceiling of the concrete floor above.



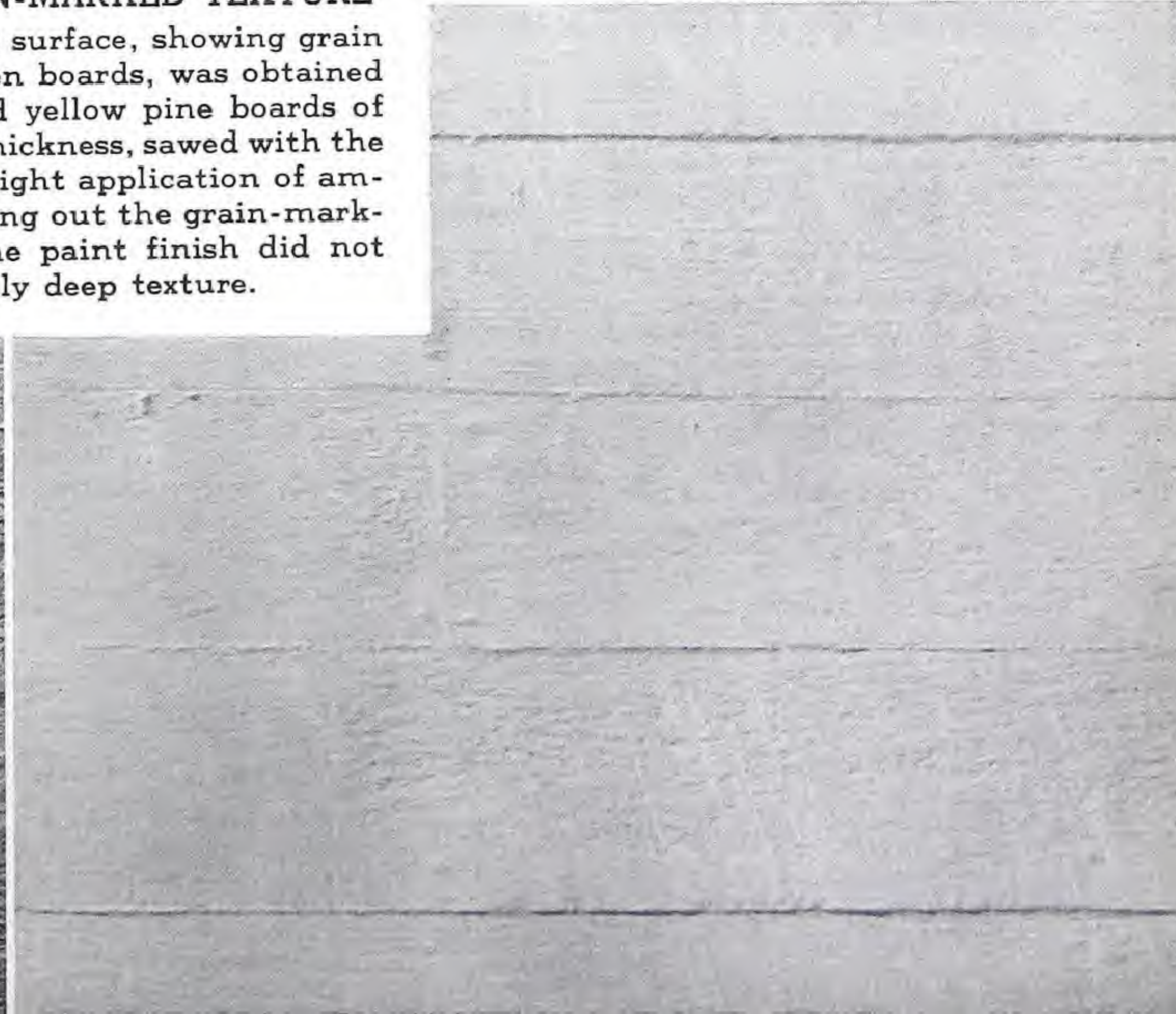
Finish—Raised grain-marked.



### EMPHASIZED GRAIN-MARKED TEXTURE

This rough-textured surface, showing grain and joint-lines between boards, was obtained by using square-edged yellow pine boards of 6-in. width and even thickness, sawed with the grain of the wood. A light application of ammonia was used to bring out the grain-markings more clearly. The paint finish did not efface this intentionally deep texture.

Finish—Raised grain-marked, painted.







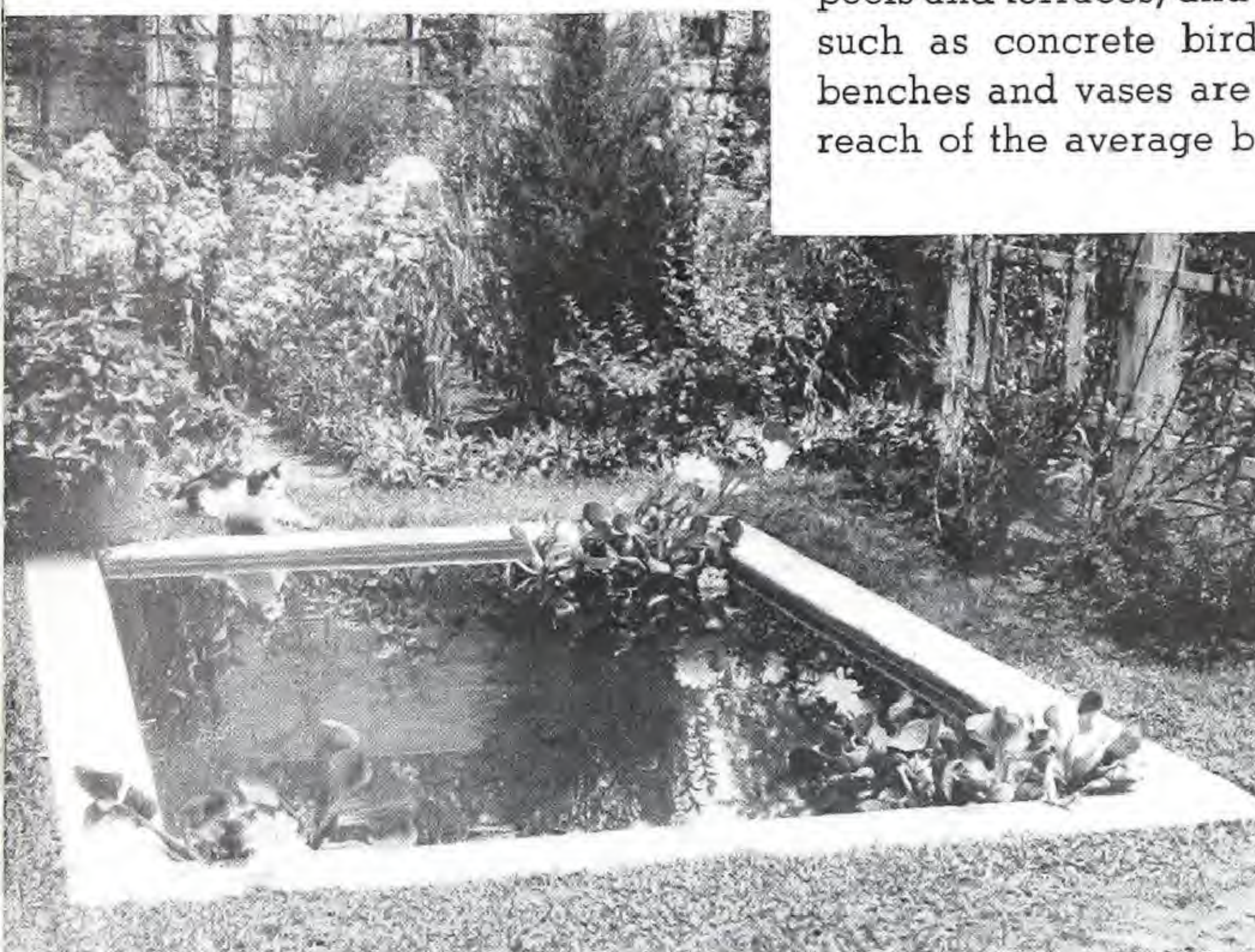
A broken pattern and warm color make this concrete terrace a popular spot.



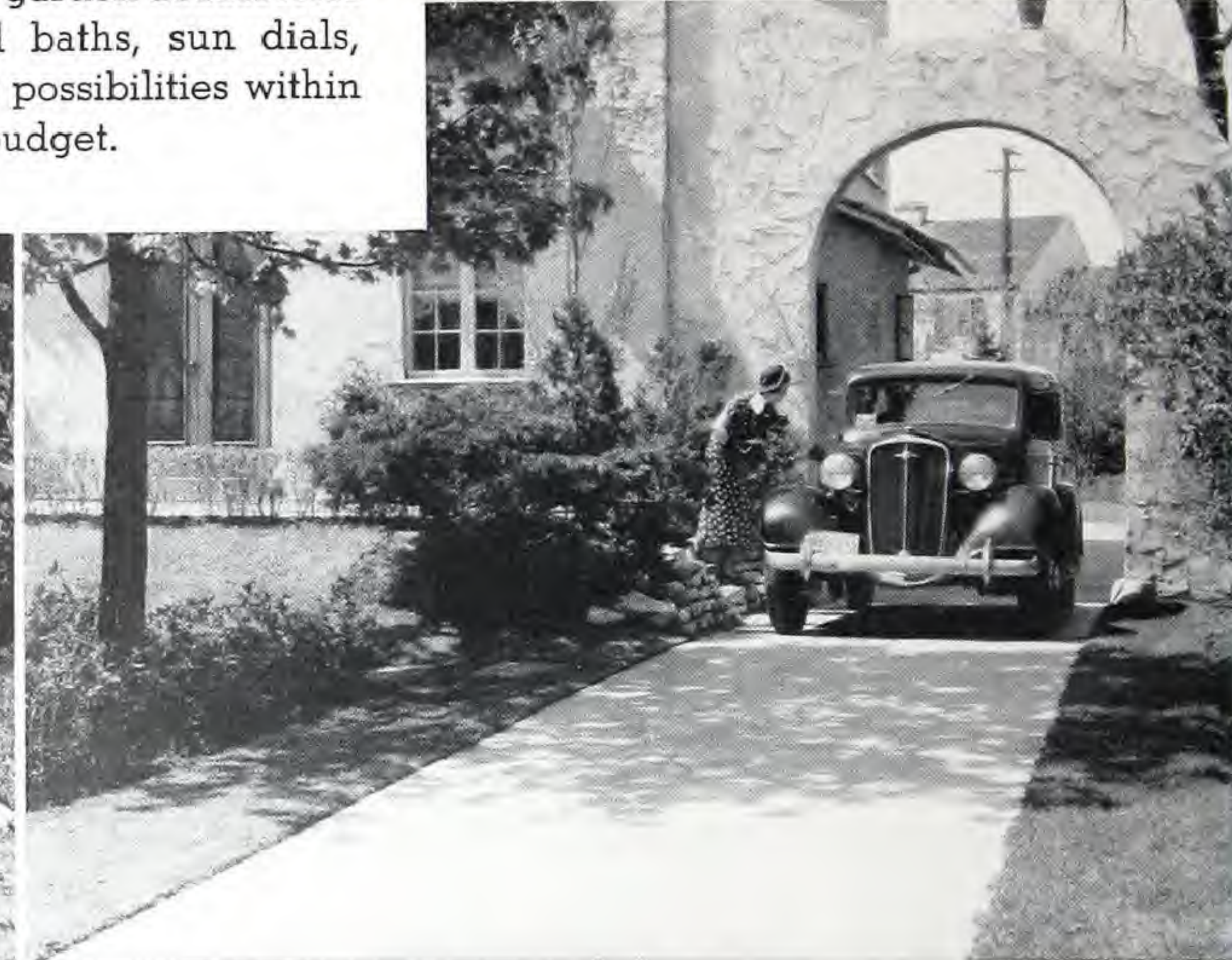
A pleasing flagstone effect is achieved in this gaily colored concrete walk.

### Make the Home Grounds Beautiful

The grounds around the home can easily be made so attractive that they would be the pride of the owner and the joy of the family. Inviting walks, trim drives, limpid pools and terraces, and garden accessories such as concrete bird baths, sun dials, benches and vases are possibilities within reach of the average budget.



The charm spot of any garden is the lily pool.



A concrete driveway makes the home look neat.

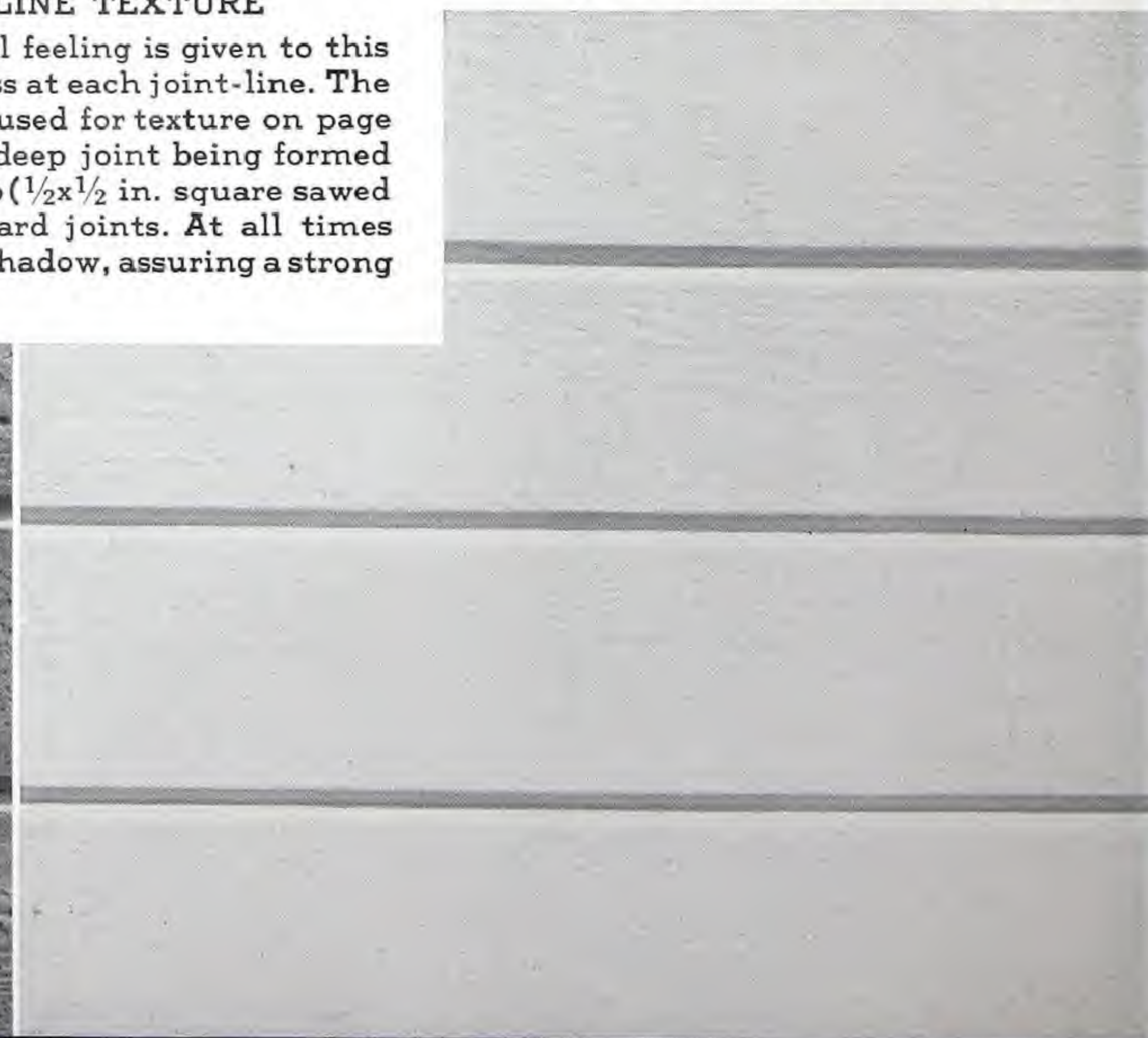
Finish—Raised grain, rusticated.



### DEEP JOINT-LINE TEXTURE

A definite horizontal feeling is given to this wall by forming a recess at each joint-line. The same form lumber as used for texture on page 21 was used here, the deep joint being formed with a triangular strip ( $\frac{1}{2} \times \frac{1}{2}$  in. square sawed diagonally) at the board joints. At all times this joint is in partial shadow, assuring a strong horizontal feeling.

Finish—Raised grain, rusticated, painted.





## Own a Firesafe Concrete Home

**A**NYONE who can afford to buy or build and own any kind of home can better afford one built of concrete. The initial cost of reinforced concrete construction may be slightly higher than the cost of other types of construction, but since the long life of a concrete house brings accumulated savings in insurance, maintenance and slower depreciation, this firesafe type of construction is lowest in cost over a period of years.

### How to Get A Concrete Home

People by the thousands ask: How can I get a concrete house? Who can design it? Who is a good builder in my locality? What will it cost? Can I get a long-term loan?

For people who are convinced that they want a concrete home, who want it designed and built properly, these problems can be ironed out easily.

### The Design and Plans

For your concrete house plans, always select an architect or a designer who is familiar with concrete and its many uses. Hundreds of America's best architects, recently competing in concrete house design contests, are in close touch with the latest and best methods of using concrete. Take your ideas to an architect or a skilful designer and have him adapt them to concrete construction. If you don't know who the best designers in your locality are, ask your local ready-mixed concrete producer or concrete contractor to suggest names of reliable architects experienced in concrete design.

### Getting the House Built

Only an experienced and reputable builder should be commissioned to erect your concrete house, and he should be thoroughly acquainted with the new technique of concrete construction. Here again, the ready-mixed concrete producer or concrete contractor in your town can put you in touch with competent builders.

### Financing Your House

After you have your plans, go over them carefully with your financing agency to be sure that the house is designed to secure the most favorable arrangements. It is possible to get loans insured by the Federal Housing Administration payable for periods up to 20 years. Other types of loans can be made on similar terms.

### About Concrete House Costs

Accurate estimates of the cost of concrete homes can only be made by studying complete plans showing the type of equipment specified. Costs then will be largely guided by varying costs of materials and labor in your community. Your local builder will be able to give you close estimates based on local conditions.

If the first bid you get is higher than you think your budget allows, do not sacrifice firesafety to bring the cost within your means. Walls, floors and roof, which provide fire protection, are less than half the cost of the complete house. By adjusting the plans, decorating, and class of equipment used, you can reduce the total cost of the house to fit your pocketbook. Never sacrifice all-important firesafety of concrete construction and the many advantages in economy and livability that go with it.

### If You Want A Concrete House— Do Not Be Dissuaded

Not all builders are familiar with the latest developments in concrete house construction. For that reason they might urge you to build in another type of construction with which they are better acquainted. **BUT DO NOT BE LED FROM YOUR DETERMINATION TO BUILD A FIRESAFE HOUSE.** Consult builders who can convince you of their ability to give quality materials and workmanship. When in doubt, consult your local ready-mixed concrete company or concrete contractor. They are informed about experienced builders.

**PORTLAND CEMENT ASSOCIATION — 33 West Grand Avenue, Chicago, Illinois**



